

A BEHAVIOR DIMENSION FOR AUDIENCE  
ANALYSIS AND ADAPTATION

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Bachelor of Science

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1973

Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirements for  
the Degree of  
MASTER OF ARTS  
December, 1987

Thesis  
1987  
R329b  
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## PREFACE

Writers in the workplace must analyze their audiences and respond to the needs of those audiences. But current methods of audience analysis and adaptation do not explain how to recognize and adapt to the personal traits, attitudes, and beliefs of individual members of the audience as they are expressed through behavior. In order to create a more dynamic approach to audience analysis and adaptation that can describe real people in real situations, in this thesis I suggest a behavioral dimension for audience analysis and adaptation. Writers should use this behavioral dimension in conjunction with current strategies for writing to audiences as they are outlined in the literature review. In this thesis, I present four behavioral patterns and explain writing strategies to use for each behavioral pattern.

I thank Dr. Sherry Southard, my major adviser, for her continual encouragement, guidance, and assistance throughout my master's degree program and especially while I wrote my thesis. I also thank Dr. Thomas Warren and Dr. Paul Klemp, my thesis committee members, for their advice and help. Special thanks are due to the Society for Technical Communication for the generous scholarship that made it possible for me to pursue a masters degree.

I could never have completed this thesis without the loving support of my husband, Joe, and the patience of my two daughters,

Tanya and Tracy. I thank each of them. I dedicate my thesis to the memory of my father-in-law, Truman W. Reese, who played a special role in my family's life during the time that I was completing my masters degree.

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## CHAPTER I

### INTRODUCTION

#### Subject and Purpose

Anyone who writes on the job, whether as his or her primary job or as just one aspect of the job, must take into consideration the needs of the readers. In fact, the success of any technical document rests largely on the ability of the writer to tailor the document to the informational requirements, comprehension level, and reading skills of the reader. In a study of writers in industry, Odell et al. (1983, 19) report that these writers "often have detailed knowledge about their audiences and have developed a repertoire of strategies for dealing with their audiences." Writers on the job realize that failure to communicate effectively may lead to dissatisfied customers, inability of coworkers to perform their jobs correctly and efficiently, loss of opportunities for promotion, and even loss of the writers' jobs. Thus, meeting the reader's needs is even more important in technical writing than in other forms of writing. In this paper, technical writing refers to functional writing. It helps people on the job perform a task, whether making a decision or operating equipment.

Journal articles and texts on technical writing exhort writers to "Know your audience." Some offer checklists, questions, charts,

and classification systems (for example, Pearsall's five audience categories, 1969) for analyzing audience before writing. Most ask the writer to describe the reader in terms of physical or demographic characteristics (age, education, experience), in terms of how the reader will use the information (consumer, executive, operator), in terms of the reader's role within the organization, or some combination of these approaches.

Although these criteria are useful, and probably even essential to understanding the reader, they lead to a two-dimensional picture of the reader. They generally leave out information about the personal traits, attitudes, and beliefs of the reader. In order to create a more dynamic approach to audience analysis and adaptation that can describe real people in real situations, in this thesis I suggest a behavior dimension for audience analysis and adaptation. Behavior is the external measure of such internal variables as feelings, attitudes, and values. The purpose of my research is to examine how an understanding of behavior patterns within the work environment can help us analyze and adapt to the reader's needs. But first, let's examine the role of behavior in the communication context as explained by communication theory.

### Behavior in the Communication Context

In this section, I describe three early theories or models of communication and two more recent ones that indicate the role of behavior in the communication context.

Lasswell (1948, 37) developed a verbal model of communication: "Who says what in which channel to whom with what effect?" Here

effect implies some observable and measurable change, i.e., behavior. Lasswell focuses on communication as part of a social process.

Shannon and Weaver (1949) developed a linear model of communication which identified three levels of problems in communication. Level A deals with the technical problem of transmitting the symbols of communication accurately. Level B deals with the semantic problem of transmitting the precise meaning of the symbols of communication. Level C deals with the effectiveness problems of bringing about the desired conduct. Level C focuses on the ability of communication to affect behavior in the way the communicator desires. Although Shannon and Weaver focus on channel A and do not develop channel C, they do acknowledge its place in information theory, and they emphasize the overlap among all three levels.

George Gerbner (1956) expanded on Shannon and Weaver's model. He described a communicating dimension (selection of the channel of communication) and a perceptual dimension (selection of the message). In written communication, the author selects the information to present to the reader. In the selection process, the author distorts the message. Likewise, the reader interprets the external stimuli according to his or her internal thought patterns. According to Gerbner, these thought patterns that influence the reader's perception are a result of the reader's cultural experience. Therefore, in order to anticipate the reader's response, the writer needs to understand the reader's culture, that is, the reader's social, historical, and geographical characteristics. Gerbner's theory can be carried one step further: the only way to understand the reader's culture is to observe behavior, which is a manifestation of the reader's thought

patterns and his culture.

More recently, Blaine Goss (1982) describes a communication model that ties in the behavioral aspect of communication with the language aspect. His model includes a cognitive component (meaning and language), an affective component (attitudes and self concept), and an operational component (listening and speaking, to which we might add reading and writing). Goss explains that communicators are "multifaceted":

When you speak, write, listen, or read, you engage many of your mental abilities to help you understand what is going on. For instance, if someone asks you an apparently simple question such as, 'Where were you born?', your answer will be a function of what you heard (hearing), how you interpret it (listening, perception), how you feel about it (attitudes), and what you know about it (memory) (Goss 1982, 3).

Goss' model describes intrapersonal communication, and as such, it helps us see what factors affect the reader's ability to understand the information that we as writers present.

Because communicators cannot measure the attitudes, emotions, and perceptions (internal variables) of audiences, they must look at the behaviors (external variables) that result from these internal variables. According to B. Audrey Fisher (Littlejohn 1983, 39), behavior is "the smallest unit of analysis in the communication system." Fisher offers the example of an assembly line worker:

This worker has many feelings, thoughts, emotions, attitudes, and values that are important in determining her behavior. Coworkers and superiors, however, have no way to know what is happening inside this person except by observing her actual behaviors (Littlejohn 1983, 39).

Thus, the technical communicator needs to examine the worker's

behavior patterns in the work environment and then consider how the behavior will affect communication. This observation of readers' behavior patterns can help the writer analyze and adapt to the audience's needs. Now let's look at the need for audience analysis and adaptation in the corporate environment.

### The Need for Audience Analysis and Adaptation

Much of the writing in the workplace (i.e., nonacademic settings) is done by employees who have been hired for their technical expertise but who are required to report the results or progress of their projects in writing. Often these employees have little or no training in technical writing. When called upon to report the results of their technical projects, they usually report the information that seems important to themselves in chronological order corresponding to the order in which they attacked the technical problem they were studying. Generally, they give little thought to the reasons why their supervisors have requested the report or the specific uses these supervisors have for the report. The writers rarely consider who the primary or secondary readers will be.

Barry Kroll (1978) labels this narrow focus of a writer on his or her own viewpoint "cognitive egocentrism." In other words, writers tend to assume that readers share the writers' viewpoints, and thus writers do not provide enough information or provide the wrong information. Writers need to consider the readers' viewpoints and create reader-based prose. Reader-based prose is more effective than writer-based prose (the egocentric focus) because reader-based prose answers

the question, "How did they (the investigators) define the problem, and what did they conclude?" (Flower 1985, 165). Writer-based prose narrates the writer's investigative process and delays telling the key information--the results of the investigation.

Carol Berkenkotter (1981) used thinking-aloud protocols to determine if expert writers actually consider their audiences. She showed that expert writers do indeed think about their audiences, and their analysis of the audience affects the goals and form of their writing. Most of the writers in her study created scenarios to help the reader understand the concepts they were presenting.

In "Analyzing the Specific Audience Situation," W. A. Mambert (1968, 80) compares the writer's analysis of audience to the salesman's analysis of the needs of a potential client.

Just as the salesman 'qualifies' the prospective buyer by asking such questions as does he/she need and want the product? can he/she afford it?, the technical writer (presenter) should qualify his 'prospects' by asking: 'Are the audience's and presenter's objectives sufficiently aligned and similar to justify the presentation?'

The good salesman anticipates the potential client's needs, rather than delivering a memorized sales pitch. Likewise, the good writer needs to anticipate the reader's needs, rather than delivering a story or list of chronological events. Otherwise, just as the prospective buyer may close the door in the salesman's face, the reader may close the cover to the report. In this thesis, I investigate a method of improving audience analysis and adaptation so that the technical writer can create more effective technical documents that suit the needs of their readers.

## Scope

The remainder of this thesis is divided into three sections. In the Review of the Literature, Chapter II, I discuss the historical roots of audience analysis, current definitions of audience, three methods of analyzing audience and adapting to audience, and results of research on audience. In Chapter III, I explain a behavioral component and its application to technical writing. Summarized in Chapter IV are the advantages of adding the behavioral dimension to audience analysis and adaptation and strategies for applying this dimension.

## CHAPTER II

### REVIEW OF THE LITERATURE

This chapter reviews literature on audience. It is not limited to literature on audience in technical writing because so much of the investigation of audience in writing has arisen from composition theory and pedagogy. This information too can be helpful to writers in industry. Sources for research included scholarly works on classical rhetoric, articles in technical writing journals and language and composition journals, technical writing texts, and a manual specifically addressing audience analysis and adaptation in technical writing. I have divided this section into four general areas:

- Historical Roots of Audience Analysis
- Current Definitions of Audience
- Current Methods of Audience Analysis and Adaptation
- Results of Research on Audience.

#### Historical Roots of Audience Analysis

This section does not attempt to thoroughly cover audience analysis as it was understood and applied throughout history, but rather to highlight key figures and elements that influenced twentieth century audience analysis.

Aristotle is among the earliest to consider the role of audience in rhetoric. In fact, he defines audience as the most important



element in oratory: "For of the three elements in speech-making--speaker, subject, and person addressed--it is the last one, the hearer, that determines the speech's end and object" (Aristotle 1941, 1335). Aristotle classifies audience as three types: a judge, a member of the assembly, or a juryman. The judge rules on events past or future. A member of the assembly focuses on future events. The juryman is interested in past events.

Aristotle's method of audience analysis involves understanding "the various types of human character, in relation to the emotions and moral qualities showing how they correspond to our various ages and fortunes" (Aristotle 1941, 1403). He discusses in detail these human characteristics as they relate to three age groups (youth, the prime of life, and old age) and to the hearer's fortune (birth, wealth, power, and their opposites). But Aristotle does not offer any strategies for applying this knowledge about audience. He seems to assume that speakers can draw on common sense to develop appropriate material for each audience.

Cicero (1970) spoke of audience when he addressed disposition (or arrangement of material) in De Oratore. He noted six audience variables that the speaker needed to be aware of: age, education, social and economic levels, political loyalties, and temperament at the time of the speech. Cicero emphasized the need for orators to be well trained in liberal arts. A man with such a background would then know how to apply his knowledge of the characteristics of the audience to his oratory. Thus, like Aristotle, Cicero did not attempt to explain strategies for applying knowledge of audience to rhetoric.

Throughout the Middle Ages, the works of Aristotle and Cicero greatly influenced the teaching and practice of rhetoric. The Roman Catholic Church also left its mark on rhetoric, particularly in the art of preaching (ars praedicandi) and in the art of letter writing (ars dictaminis).

Pope Gregory the Great, a famous author on preaching, published his most famous book, Cura pastoralis (Pastoral Care), in 591 A.D. He instructs preachers to fashion their sermons to a variety of listeners. Pope Gregory identifies 36 pairs of human characters, each pair consisting of opposites. Following are some examples from his list (Murphy 1974, 294):

men	women
young	old
rich	poor
joyful	sad
subjects	prelates
servants	masters

No consistent pattern exists in the list, since items deal with sex, age, social rank, attitudes, education, and other observable traits. Nor does Pope Gregory address the overlap among pairs of characters. For example, a member of the audience may be a young, poor servant. Also, Pope Gregory does not explain how to address audiences made up of diverse characters. He does include a brief sermonette (or sample) of the sort of material that is appropriate for each characteristic. Thus, Pope Gregory's audience analysis alerts preachers to different human characteristics and presents models for them to follow.

Audience analysis plays a role also in medieval letter writing. The author of The Principles of Letter-Writing (Anonymous of Bologna

1971), published in 1135 A.D., lays out detailed instructions on how to write the salutation of a letter, depending on the social rank of the reader and the writer. He gives exact wording or choices of wording for superior to inferior (such as a letter from the Pope to the secular clergy), inferior to superior (such as pupil to teacher), and equal to equal (such as ecclesiastical among themselves). Rank dictates not only the choice of wording, but also the sequence of placing the names of the writer and readers in the salutation and the appropriate Latin endings (nominative, dative, or accusative). In addition, the author of The Principles of Letter-Writing addresses the handling of audiences that consist of more than one reader. Thus, the wording of the greetings of letters was well established to ensure proper respect for social standing. Audience dictated form.

A major influence on audience in rhetoric during the Renaissance was the writing of Francis Bacon (1565-1621). Bacon (Wallace 1943) identifies two broad groups of audiences: intellectual inferiors (such as pupils) and equals (such as critics and scientists). But he says that the orator must go beyond generalizing the character of the audience as a group and probe into the nature of the individual. Like Aristotle, Bacon urges the orator to study human nature and affections. One way to learn about audience is by close observation of those characters

...which are imposed on the mind by sex, by age, by religion, by health and sickness, by beauty and deformity, and the like; and again, those which are caused by fortune, as sovereignty, nobility, obscure birth, riches, want, magistracy, privateness, prosperity, adversity, and the like (Wallace 1943, 131-132).

Besides observing members of the audience, Bacon says that the

rhetorician should learn about audiences by reading about human character in writings of poets, of history writers, and of the Stoics. According to Bacon, the best sources are the historians, who can paint a picture of men: "...for a character so worked into the narrative gives a better idea of the man, than any formal criticism and review can..." (Wallace 1943, 132).

Thus, from Aristotle through Bacon, the role of audience was crucial to rhetoric. Understanding audience chiefly involved observing human nature as it was apparent through age, sex, social level, economic welfare, religion, education, political loyalties, and temperament. Seldom did the writers I have discussed provide information about how to adapt their message to the audience's needs. Common sense buffered by good training in the liberal arts would guide rhetoricians in this facet.

Now let us look at current definitions of audience followed by current methods of audience analysis and adaptation.

#### Current Definitions of Audience

In order to learn how to analyze and adapt to audience, the technical writer must understand the meaning of the term audience as it is currently used. Most of the literature about the meaning of audience comes from composition theory and pedagogy. In this section, I summarize that literature and then apply the information about the meaning of audience to technical writing.

Douglas B. Park (1982) has summarized current interpretations of audience in his article "The Meanings of 'Audience.'" According to Park, the current trend in defining audience is in two directions.

The first direction describes audience as potential readers, an actual group of people in a specific rhetorical situation for whom the writer intends the information. This audience is the more concrete audience that can be identified by answering the question, "Who has a specific involvement in this communication situation?" The second direction that Park identifies is audience as implied in the text: "...a set of suggested or evoked attitudes, interests, reactions, conditions of knowledge which may or may not fit with the qualities of actual readers or listeners" (Park 1982, 249). The writer creates this audience to fit the context and purpose of his or her discourse.

Park goes on to say that whether audience refers to actual people external to the text or to implied readers internal to the text, audience is not really the people but rather "...those apparent aspects of knowledge and motivation in readers and listeners that form the contexts for discourse and the ends of discourse" (Park 1982, 249). In other words, the people are significant as audience only in terms of their interaction with the text. Thus Park focuses on the text. He recommends that writers "...replace the question, 'Who is the audience?' with a set of more precise questions as to how the piece in question establishes or possesses the contexts that make it meaningful for readers" (Park 1982, 252). But Park fails to present any strategies for developing appropriate contexts. Primarily he discusses audience as it applies to composition and points out the difficulty of teaching audience analysis in composition classes because of the ambiguity and abstractness of the term.

Like Park, Walter Ong (1975) views audience as an abstraction. Unlike the oral storyteller, the writer of literature has no

collective audience to address. Ong asserts that the writer's audience is always a fiction. According to Ong, the successful writer creates in his or her imagination an audience playing a certain role. The actual reader must in turn play the role cast for him or her by the writer. Rarely does that role correspond to the reader's role in real life. Thus, the writer controls the writing and dictates the reader's response to the discourse.

Like Ong, Russell Long (1980) says that writers should create their audiences by the writing choices and decisions they make. In "Writer-Audience Relationships: Analysis or Invention," Long argues against the common practice of stereotyping audiences on the basis of physical or occupational characteristics. He says that this type of stereotyping leads only to a superficial understanding of readers. In addition, this type of audience analysis examines the potential reader, the "pre-reading audience," not the actual reader, "audience as audience, or reader reading" (Long 1980, 224). This latter audience is the more important according to Long. Thus, writers need to concentrate on who they want their readers to be and employ methods (such as choice of point of view, diction, and tone) that create that audience. Long, like Ong, then defines audience as the group of readers that the writer chooses to create, not an existing group of potential readers that must be analyzed.

On the other hand, Walter Minot (1980) in his "Response to Russell C. Long" argues that the writer needs to both analyze and invent the audience. If the writer's purpose is to communicate with real audiences, he or she must learn as much about those audiences as possible. But after analyzing the facts the writer has

gathered about the audience, the writer may need to invent or generalize to fill in gaps in information about the audience. Minot says that creating audiences is more appropriate for literary works than for rhetorical works where the audience addressed must correspond to the rhetorical situation.

Lloyd Bitzer (1968) defines the rhetorical situation as the people, places, events, and circumstances that require a fitting response. Bitzer describes communication brought about by the demands of an organized situation with a real audience with real needs. The writer must objectively observe the reality of the rhetorical situation and respond appropriately to the situation. In contrast to Ong's view that the writer dictates the reader's response, Bitzer says that the writing situation dictates the writer's response. Therefore, the rhetorical situation controls the nature and strategies of the communication.

In the article "Audience Addressed/Audience Invoked: The Role of Audience in Composition Theory and Pedagogy," Lisa Ede and Andrea Lunsford (1984) argue, like Minot, that the writer needs to both analyze and invent audience. Ede and Lunsford synthesize the fictive (or created) audience and the real audience. They label the fictive audience "audience invoked" (focusing on the writer's role) and the real audience "audience addressed" (focusing on the reader's role). Reader and writer are equally important and must be intertwined and balanced for a more complete understanding of audience. In sum, "Writers may analyze these reader's needs, anticipate their biases, even defer to their wishes. But it is only through language, that writers embody or give life to their conception of the reader"

(Ede and Lunsford 1984, 167). The audience invoked consists of the writer's vision of the audience and the methods the writer uses to draw the reader in to participate in that vision. The audience addressed is the concrete reality of the reader's physical characteristics and informational needs.

In technical writing, audience addressed applies to those specific people with specific needs for the writing in a specific setting, usually a corporate setting. Technical writers cannot isolate themselves from the reality of the work world that they serve. The needs of the corporate reader dictate the content of the technical document, its structure, and the way that the writer can say what he or she needs to say. Therefore, in this thesis, the term audience is used interchangeably with reader to identify specific people who need the information within a business or corporate context. Audience analysis refers to the writer's investigation of the reader's physical and behavioral characteristics as well as his or her informational needs to perform a specific task. Audience adaptation describes the strategies and clues that the writer uses to help the reader understand the document and perform the task. In the next section, I review the literature on audience analysis and audience adaptation.

#### Current Methods of Audience Analysis and Adaptation

In "Audience: An Introduction to Research," Lisa Ede defines audience analysis as "those methods designed to enable speakers and writers to draw inferences about the experiences, beliefs, and attitudes of an audience" (1984, 140). Adaptation is the writer's



response to the inferences he or she draws about the readers. Several articles from technical writing journals and composition journals offer advice on analyzing audience. Most technical writing textbooks devote a few pages or a complete chapter to instructions on how to analyze the writer's audience. In an appendix to his thesis, Harvey Homsey (1984) lists 43 technical writing textbooks and their coverage of audience analysis. In the rest of this section, I cite advice from the literature and from technical writing textbooks on methods of analyzing and adapting to audience. I will discuss three general approaches to analyzing and adapting to audience:

- Use of a Classification System for Audiences
- Analysis of the Writing Situation
- Study of the Interrelationships of Audience and Other Writing Components.

Many authors recommend a combination of these approaches, so often overlap occurs in this discussion of methods of audience analysis and adaptation.

#### Use of a Classification System for Audiences

Thomas Pearsall (1969) classified audiences into five categories: layman, executive, expert, technician, and operator. These categories are based on the reader's education, experience (or job title), and purpose for reading. Later, in a textbook coauthored with Houp (1984), Pearsall eliminated the operator category, probably because of its similarity to the technician category. Pearsall explained strategies to use for each type of audience. Because this classification system has been widely used in the field of technical writing, it warrants

further discussion of each category.

The lay audience is reading out of its field. Therefore the writer should assume no experience or expertise in the subject. The lay reader reads for interest, so the writer can add human interest stories as lively examples to motivate the lay person to read. The writer can assist the lay reader by providing background information; using analogies; defining difficult vocabulary words and all technical terms; presenting information in simple tables, bar graphs or pie charts; eliminating all but simple mathematics; and using short sentences and paragraphs written in the direct subject-verb-object order. The lay audience is the most difficult to write for because it is so varied in background and education. The lay reader may be a Ph.D. physicist reading an article about gardening, or a high school graduate reading an article about astronomy.

The executive reads in order to make decisions about the people who are working under him or her or about the use of money and materials within the company. The executive probably has a college degree, but could well be reading out of his or her field. The executive may have an education in engineering, but may need to understand data from the Accounting Department. The writer needs to avoid very technical information, unless he or she can simplify the explanation, or include the technical information in an appendix. Because executives come from many disciplines, unless the writer knows that the executive is an expert on the subject, the writer should follow the same guidelines as for the lay audience. The executive expects the writer to interpret findings and recommend action to be taken.

Experts have an advanced degree in the subject at hand, or a

bachelors degree and several years of experience. Experts like facts and especially new information. Theory and methodology are important to them. Technical detail and terminology, complicated formulas and equations, and more difficult charts and graphs are all acceptable for the expert audience. Like executives, experts want the writer to state inferences and conclusions. The format of articles written to experts usually includes an introduction, methods, observations, results, and conclusions.

The technician builds, maintains, and uses the equipment. He is looking for practical information about how to do something better. Reports for technicians usually are in manuals describing how to install, operate, maintain, or overhaul equipment. Illustrations are essential, such as "exploded" drawings, schematics, photographs, or tables. Generally the technician can understand technical terminology and some theory. Warnings and cautions are common in manuals for technicians. Because many of the manuals may be instructions, sentences should be short, straightforward, and in the imperative mood. The decimal system is common in manuals because it provides an efficient method of cross referencing sections.

Houp and Pearsall warn that these four audiences are not homogenous units, but rather generalizations. They explain that only the writers themselves can analyze their own audiences, based on the writer's personal knowledge of the readers. The practical and detailed advice that Houp and Pearsall provide for these four audiences is most helpful to the writer. But they do not consider readers' attitudes, beliefs, or values as these variables relate to the writing situation.

### Analysis of the Writing Situation

Mathes and Stevenson take a situational approach to audience analysis. In Designing Technical Reports: Writing for Audiences in Organizations (1976, 3), these two authors define the technical report as "an act of communication by a professional in an organizational system to transfer information necessary for the system to continue to function." Their book focuses on the role of engineers writing for an organization. Likewise, their analysis of audience is based on an analysis of the function of the document within a dynamic organization. First, Mathes and Stevenson identify eight false assumptions writers often make about their audiences. Then they explain a systematic, three-step method for analyzing complex audiences.

The first step requires the writer to develop an egocentric organization chart showing potential readers and their proximity to the writer. The egocentric organization chart helps the writer see his or her position relative to the readers in the actual organization and each reader's concerns.

In the second step, the report writer needs to evaluate each potential reader in terms of his or her operational characteristics, objective characteristics, and personal characteristics.

The final step is to rank readers as primary, secondary, or immediate audiences. Then the writer can design the report to meet the needs of these audiences. In addition, Mathes and Stevenson provide a matrix that shows what information the writer has collected during his or her systematic audience analysis.

This approach is very complex and involved, but it helps the writers understand the complexity of audience. Unfortunately, few writers are likely to put out the necessary effort to complete Mathes and Stevenson's involved audience analysis.

Goldstein (1984), too, emphasizes that audiences must be analyzed on the basis of their roles within an organization. She criticizes the categorizing of readers by position within the organization (supervisor, peer, subordinate, etc.) and calls for a recognition that these readers are "individual members of interacting communities located within very explicit corporate cultures--'Around here we say...'" (Goldstein 1984, 30). Thus, an understanding of behavior and interpersonal relationships should play an important role in audience analysis. Goldstein does not offer a method of audience analysis.

Patricia Caernarven-Smith (1983) has written a how-to book called Audience Analysis and Response to help writers in the corporate environment learn about their audiences and adapt to their audience's needs. The first half of her book explains how to analyze audience. Understanding audience requires an understanding of the readers' skills (both reading and technical skills), working conditions, and problems on the job. She explains two ways to gather information about the readers: statistical studies of the group of readers (i.e., market research) or analysis of individual readers' needs based on the writer's knowledge of the reader. Caernarven-Smith presents a lengthy list of questions to ask about the readers. As an example, she gives her answers to the questions as they apply to the audience for her book.

Caernarven-Smith devotes the last half of her book to audience

response. She emphasizes that the writer should not try to change the reader, but accept the reader and change the presentation of the message to meet the reader's needs. This response she calls audience advocacy. To respond to audiences, Caernarven-Smith recommends that writers list specific methods of responding to each of the answers to the questions in the audience analysis list. These methods may include difficulty of language, types of graphics, organizational techniques, and necessary content. She gives her response to questions about the audience for her book.

Caernarven-Smith's book is especially helpful to writers in industry because her focus is on the work world and her audience is the communicating professional. She provides good examples from business, and she asks questions keyed to the needs of readers on the job. For example, many of her audience analysis questions are about the conditions under which the reader will perform the task and the attitudes of the reader toward the task:

- How much time is available?
- How much danger is involved?
- How willing is the audience to perform this job?
- Where will the job be performed?
- How tough is the job? (Caernarven-Smith 1983, 48)

Use of a classification system, as well as the situational approach to audience analysis and adaptation, focuses on factors external to the text. Authors in the next section suggest looking at factors internal to the text as they relate to audience. They argue that this approach helps writers to analyze audience throughout the writing process, instead of limiting analysis to the pre-writing

stage.

Study of the Interrelationships of Audience  
and Other Writing Components

Pfister and Petrick (1980) have developed a heuristic model that requires the writer to examine the interrelationships of writer, subject, reader, and form (or style) from the eyes of the reader. The model is composed of a series of questions that help the writer delve into these relationships. The decisions the writer makes (such as content, style, tone, diction) can then be based on the answers to these questions. This model helps the writer incorporate what he knows about the reader into the entire writing process. The weakness in the model is lack of information about strategies for actually applying the information learned from the questions to the content and form of the written document. The authors leave that to English teachers to explain in the classroom.

In "The Communications Triangle," Pearsall (1980) recommends using a "Report Worksheet" for analyzing the writing situation as it relates to the audience. The worksheet ties audience analysis to the writer's message and the writer's purpose--the communication triangle. It asks for information about the reader, the reader's purpose(s), the writer's purpose(s), and the content and plan for the report. It helps writers adapt their purpose and message to the audience's needs.

Roberts and Sullivan (1984) review three current strategies for teaching audience analysis: classifying audiences, analyzing the writing situation, and studying the readability of the text. They conclude that these approaches are static and that they encourage

pre-writing analysis of the audience, but not flexible consideration of audience throughout the writing process. Roberts and Sullivan recommend that writers use reading protocols to analyze papers written for their peers. As a result, writers can begin to understand readers' needs during the entire writing process, as well as improve their understanding of how readers read. The ultimate goal is for the writer to make flexible decisions about audience throughout the composing process--leading to a dynamic analysis of audience.

In "The Informational Requirements of Audiences," Myron White (1980) combines external factors (situational analysis) and elements internal to the text. He recommends that writers learn Pearsall's (1969) five classifications of audiences, but also that they go beyond those generalizations. White specifies two major factors in responding to audience: (1) understanding the informational requirements of the readers in the specific situation the writer addresses, and (2) using language that is appropriate to the readers' backgrounds. Informational needs can vary for each report situation even if the readers are the same. The informational needs of the reader dictate the content the writer should include in the report. Choice of appropriate language to fit the reader's background affects the writer's expression. The writer needs to know about each special audience's needs for specific report situations in order to effectively tailor the report to the audience.

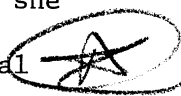
The two factors that White discusses are helpful to writers, but he fails to acknowledge behavioral variables (such as attitudes, beliefs, and values) that play a role in interpersonal communication.

Linda Flower (1981) begins to focus on the behavioral variables



of an audience in her book Problem-Solving Strategies for Writing. She identifies three critical features of readers: "the reader's knowledge about the topic, his or her attitude toward it, and his or her personal or professional needs" (p. 131). What does the reader know? What does he or she need to learn about the subject? What is the reader's image or feelings about the subject? How will the reader use the information to act in his or her specific situation? Flower notes three ways the writer can analyze audience. The writer needs to


- (1) discover who the primary and secondary readers will be;
- (2) learn about those writers' knowledge, attitude and needs; and
- (3) determine how to narrow the gap between writer and reader.

Flower goes on to explain four strategies for creating what she calls "reader-based prose." First, the writer needs to set a goal  (or purpose) that he or she shares with the reader. A shared goal increases reader motivation and comprehension. Second, the writer should structure the report around the reader's needs in order to help the reader accomplish his or her task quickly and efficiently. Third, the writer can provide cues (such as headings, key information in topic sentences, and transitional words) that help the reader locate necessary information. Fourth, the writer can persuade the reader to accept the writer's arguments by first looking at the reader's point of view. Flower provides good examples of each of these strategies. These strategies are appropriate to the technical writing needs of writers in industry.

David Carson (1980) suggests a novel approach to audience analysis and adaptation. He recommends that we use current technology to help us compile profiles of readers in the workplace and even develop

automatic editing programs for the computer based on these profiles. Audience profiles could include information about each person's reading levels, vocabulary level, and motivational tendencies. Carson says that reading levels could be determined from sampling techniques, vocabulary skills from a vocabulary exam, and motivational tendencies from comprehension tests. In addition, Carson recommends the development of a writer's casebook that would include for each reader a job description, a vocabulary list of technical terms, and model prose samples.

An automated system such as Carson suggests, although complicated, would give technical writers and editors managerial control over information flow and hopefully improve the effectiveness of their written communication. Although Carson's suggestion would be difficult to implement and perhaps it is oversimplified, it would provide writers more information about readers than many of them currently have. Unfortunately, such a system would not allow for differences in information needs in different situations, the reader's attitude toward the task, or a growth curve to account for improvement in reading skills.

 In summary, current methods of audience analysis and adaptation involve collecting information about a mixture of external variables (primarily demographic variables, occupational variables, and behavior variables) and applying that information to contextual variables (such as content, language, organization, style, and graphics). Now let's look at what research shows about the needs of audience and writing techniques for satisfying those needs.

## Results of Research on Audience

Current literature offers quite a bit of advice about analyzing and adapting to audience. But is that advice well grounded in research? In this section, I will look at what research tells us about audience analysis and adaptation in the workplace.

Odell et al. (1983) reported on three research strategies they have used to study writing in non-academic settings. To determine if the specific rhetorical situation influenced such linguistic features as syntax, the researchers analyzed a collection of writing done by caseworkers and administrators at a Department of Social Services. Their results showed that writing did vary according to the rhetorical context. These variations were related to the intended audience and the function of the document.

Another research method that Odell et al. used was to rewrite memos that legislative analysts had written and ask the analysts to orally evaluate the revised draft. The purpose of this exercise was to learn what criteria the legislative analysts used to evaluate writing. The results showed that they tried to anticipate reader reactions to writing. The analysts were alert to specific audience characteristics and shaped discourse accordingly.

The third research procedure involved interviewing employees of a state Department of Labor about job-related writing. The researchers asked the writers whether they would accept an alternative wording that the researchers suggested, and then they asked the writers to explain their reasons for rejecting or accepting the alternative. The employees often mentioned audience-focused reasons for their

choices. Odell et al. (1983, 30) reported that the workers "frequently mentioned some prior contact with their readers, remarked upon the characteristics of their audience, and speculated upon ways their readers might respond to a particular choice."

Based on the results of the three types of research, Odell et al. came to one basic conclusion about non-academic writing:

...for the writers we have interviewed, this writing is not rule-governed....Instead, each of our strategies shows that when these writers make choices of style and substance, those choices reflect a complex awareness of rhetorical context, of the interrelations of audience, persona, and subject matter (Odell et al. 1983, 20).

Thus, audience analysis and adaptation are important aspects of on-the-job writing.

Flower, Hayes, and Swarts (1983) conducted research to determine what readers need in order to understand a functional document. Using reading-aloud protocols, they gathered information about how readers interpreted a Federal regulation. A surprising result was the use of scenarios by all three readers. Rather than restating the information in the regulation in simpler ways or substituting simple words for hard ones, the readers translated the message into scenarios, giving it a concrete setting from their own experience. Further research showed that expert writers used agents and actions similar to the readers' scenarios to provide a human focus to their writing. Flower, Hayes, and Swarts conclude that "...functional prose should be structured around a human agent performing actions in a particularized situation" (1983, 42). They call this approach the "scenario principle." Their research provides useful information on how to help readers interpret functional documents.

Thomas Huckin (1983) examines research in cognitive psychology as it explains the reading process and readers' abilities to comprehend. Based on the implications of that research, Huckin develops eight tentative guidelines for technical writers. These guidelines can help writers in industry adapt content and organization to the readers' needs.

Guidelines for Document Designers (Document Design Project 1981) explains twenty-five principles for making documents easier to read and understand. It focuses on audience needs. Each of the principles is supported by evidence from research. This book is full of practical advice, and it follows its own guidelines, making it easy to read. Writers in industry should find this book useful in making their documents more readable.

Two Westinghouse studies done by J. W. Souther resulted in some significant information about what managers and their technical staff want to learn from technical reports. Souther and White (1977) reported on the results of those studies in Technical Report Writing. Souther lists questions that managers need answers to for seven key areas. In addition, Souther's research showed that the important parts of a report for managers are the summary or abstract at the beginning of the report, the introduction and background sections, and the conclusions and recommendations. Souther's study of technical staff (engineers and scientists) showed surprisingly that they, too, were more interested in the conclusions, problem statement, approach, and general concepts than in the detailed data. For the first time, research gave the writer some solid information about what the reader looks for in a report.

In Survey of Reader Preferences Concerning the Format of NASA Technical Reports, Thomas Pinelli, Myron Glassman, and Virginia Cordle (1982) analyzed the results of a survey of engineers and scientists from NASA and from the academic and industrial communities. The survey reported the preferences of these readers of NASA technical reports in regard to the organization of the reports. The results showed that both survey groups read the conclusion more often than any other part of the report. The reading order most often followed for the first six components was the title page, summary (at the beginning), abstract (at the end), introduction, table of contents, and conclusion. Report readers most often used the summary, followed by the conclusion and the abstract, to screen reports to determine whether to read them. The majority of readers preferred that illustrative material be integrated with the text rather than grouped at the end of the report. These results are similar to the results of Souther's Westinghouse studies.

More recently, Pinelli et al. (Report-reading Patterns 1984) reported on a survey of the reading habits of technical managers and nonmanagers who worked at the NASA Langley Research Center or who were members of three professional/technical societies. Results of that survey confirmed Souther's findings that managers and engineers and scientists have similar reading habits. Managers and nonmanagers had similar preferences for report format and layout.

Research completed to date has given us some information about how readers read and what their preferences are concerning format. In addition, research tells us that expert writers do consider audience needs. But audience analysis is still primarily a skill learned by

prolonged experience in observing people. More research is needed to evaluate the adequacy of current audience analysis methods and to determine which method or combination of methods works best.

### Summary

In technical writing, writers address real people with specific needs for the writing in a specific situation. Writers must respond to these needs in order to create successful technical documents. Success is measured by the ability of the document to satisfy the job-related needs of the reader accurately and efficiently.

Since the time of Aristotle, communicators have studied human character in order to understand their audiences' needs. Audience analysis has not changed significantly in more than two thousand years. Like Aristotle, Cicero, Bacon, and other classical rhetoricians, representatives from corporate and academic communities still urge writers to observe their potential readers to learn more about

- demographic variables: age, sex, social rank, health, income, ethnic ties, and religion;
- occupational variables: role within the organization, working conditions, education/experience, informational needs, technical and reading skills; and
- behavioral variables: the expression of beliefs, feelings, attitudes, and values.

Writers have used this information to structure their reports. Generally, the writer's response to audience has taken the form of manipulation of language, content, graphics, mathematics, style, and organization. Pearsall (1969, 1984), Caernarven-Smith (1983), and

Flower (1981) provide the most concrete information about how to tailor report components to the audience's needs. Some authors (e.g. Pfister and Petrick 1980, Roberts and Sullivan 1984) seem to expect writers to rely on their training in basic writing skills to know how to apply knowledge of the audience to report writing.

Recently, communication research has given writers information about how readers read, how expert writers consider audience, what readers prefer in terms of format, and what writing techniques can improve comprehension. However, research does not give us information about the effectiveness of proposed methods of audience analysis.

I believe that writers can respond to their audiences most effectively when they have information about all three variables listed previously: demographic, occupational (or situational), and behavioral variables. Information about demographic and occupational variables is usually readily available. The weak link in audience analysis is learning about behavioral variables. Odell, Goswami, Herrington, and Quick (1983) reported that experienced writers in a state Department of Labor do consider behavior. When seventeen employees were quizzed about their choice of words in specific writing contexts, the employees often included personal traits of the readers, attitudes of the readers, or anticipated change in the feelings of the readers.

Behavior is the individual's outward expression of his or her feelings, emotions, attitudes, values, and beliefs. The writer can observe these traits only by observing behavior. But behavior is difficult to measure. None of the authors in this literature review suggests methods of measuring reader behavior or methods of responding



to that behavior in the writing situation. In the next chapter, I describe four behavior patterns of workers. Then I explain appropriate strategies for satisfying the reading needs of workers from each behavioral pattern.

CHAPTER III

A BEHAVIORAL COMPONENT FOR

TECHNICAL WRITING

Since birth we have analyzed the people around us. Babies quickly learn from the tone of the parents' voices or the way parents hold them what the parents' moods are. As children grow older, they learn the right moment to ask Dad for something special or when to avoid him. Students at every grade level from elementary school through college try to figure out what teachers want when they assign homework. Employees likewise evaluate the words of their supervisors to find the underlying meaning of what these bosses are looking for. But what we need is a practical guide for evaluating behavior--a guide that takes our behavior analysis from a subconscious effort to a conscious effort.

The idea of types of behavior is not new. We read about "Type A" personality--highly driven individuals who are prone to heart attacks. In the business world, placement offices use personality tests to try to measure behavioral traits. Two common personality tests are the Rorschach ink blot test and the Minnesota Multiphasic Personality Inventory. In another discipline, Bill West (1982), a professional speaker, describes behavioral types for speakers and their audiences. If we look beyond the field of technical communication, there are many examples of behavioral analysis.

No one can provide a foolproof method for analyzing the behavioral patterns of the individuals with whom we work or for whom we write. Fiske (1982, 39) tells us that "no map or model can be comprehensive... This means that we have to be purposeful and deliberate in our choice of maps, we have to know why we have turned to it and what insights we require from it..." The value of determining behavioral patterns is not in the particular patterns that any model or system defines, but in how those patterns help us recognize characteristics of our readers. Based on those characteristics, we can determine what motivates them and what will satisfy their needs. The following imaginary writing situation shows how behavior affects the reader's needs and expectations.

Mr. Thompson is Vice President of Exploration at Tracy Oil Company in Bakersfield, California. He has a master's degree in geology and has worked for 15 years at Tracy Oil.

Recently, Mr. Thompson hired a senior geologist, Delmer Ray. Mr. Ray has been involved in onsite exploration drilling in an oil field near Bakersfield, CA. Mr. Thompson has asked Delmer Ray to write a report about the economic feasibility of developing this oil field, based on the core samples the geologists have obtained from recent drilling.

Mr. Ray has had experience writing similar reports. Before going to work for Tracy Oil, Mr. Ray worked for 5 years under Mr. Edison at Lee Oil Company in Odessa, Texas. Mr. Edison is Vice President of Exploration, and he, too, has an M.S. in geology. Like Mr. Thompson, Mr. Edison has worked for Lee Oil for 15 years.

Because Mr. Thompson appears to have the same needs, the same education, and the same experience as Mr. Edison, Delmer Ray feels confident that he can write a good report that will satisfy his new boss. Ray works hard to develop a thorough report using the same format as he had used at Lee Oil Co. In his report, he describes the number and depths of the test wells, the permeability and porosity of the oil/gas bearing zones at specific depths and intervals, and the economics of developing the oil field. He includes isopach maps, structure contour maps, and graphs showing the amount of oil the company could expect to

produce over the next fifty years.

The day after Ray submits the report to Mr. Thompson, an irate Mr. Thompson rushes into Ray's office, slaps the report on Ray's desk, and explodes, "If you expect me to read all this, you're sorely mistaken. I don't have time to read 30 pages. I asked you for your recommendations. Where are they?"

What went wrong? Mr. Ray evaluated his audience based on the same education and experience and the same need to make an important executive decision. This report format had always satisfied Mr. Edison.

If Ray had considered behavioral differences of his two readers, he would have seen two distinct patterns. Edison never let a report leave his desk without first reading it thoroughly and examining each detail. Because he was responsible for any decision that could involve millions of dollars, he wanted to see all the data that led up to the recommendations. Edison is very systematic and thorough in all his work.

On the other hand, Thompson counted on the expertise of his employees. He was interested in seeing recommendations and alternatives. He would make the final decision, but he did not feel obligated to read through a long report to check all the adding and subtracting. As long as that information was available (preferably in the appendixes to the report), he could check it if he doubted the results. Thompson is aggressive and results oriented. Thus, Ray needed to organize the reports to satisfy two men with very different behavioral patterns.

This particular situation shows how behavioral patterns can affect the expectations and responses of readers to written documents. In this chapter, I will describe four behavioral patterns and guidelines for adapting writing to each pattern. These behavioral patterns are

based on the studies of the late Dr. John Geier, a former clinical psychologist at the University of Minnesota. They are called the promoter, the supporter, the analyzer, and the controller.\* In the next section, I present four character sketches that describe these four basic behavioral tendencies.

### Description of Four Behavioral Patterns

#### The Promoter

Don is a dynamic, likeable fellow. His position as a salesman for a television cable company is ideal for his personality. Don likes to be around people and thrives on activity. Sitting behind a desk depresses him. In fact, Don is seldom in his office. When he's not out selling, he's visiting with others in their offices, a cup of coffee in one hand. Time is not too important to Don. His schedule is very flexible, and he's often late.

Don does a good job and is one of the top sales people for his company. But his boss often is frustrated by Don's poor record keeping. Don scribbles out new orders, often forgetting important information. He is not concerned about detail, even to the point of being disorganized. But anxious to impress, he usually dresses neatly. And if he knows you're coming to his office, his desktop will be clean and well organized (the result of quick drawer stuffing!). On the walls of his office you will find his many awards as top salesman and pictures of him receiving those awards.

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\*based on "The Persona Matrix System" developed by Performax Systems International, Inc., 1981.

Don is good with people and sincerely cares about their needs. He is quick to praise others. Don has good verbalization skills and easily persuades others to his point of view. Don has good ideas for projects or new approaches to solve problems, but following through is difficult. He quickly loses interest. Often others view Don's response to situations as impulsive and sometimes even illogical, because he does not stop and analyze the facts. Don is people-oriented, rather than task-oriented.

### The Supporter

Like Don, Mary Ann is an amiable worker who gets along with everyone. Mary Ann is a computer programmer who has worked for the company for 25 years. She likes what she does and prefers stability over variety. Mary Ann's supervisor can count on her to get the work done.

Mary Ann is not very competitive or aggressive. She is a follower and a good team member. She is strongly motivated by words of praise and support from those she looks up to. Mary Ann needs to hear that she is doing a good job.

Fellow employees like Mary Ann because she is a good listener. She takes time with people and is sensitive to their feelings. Mary Ann does not like confrontation, so she avoids saying or doing anything that will hurt someone's feelings. But her desire to please makes it difficult for her to say "no" to requests for assistance. And sometimes Mary Ann will be agreeable even when inwardly she disagrees with the plan or activity.

Mary Ann is a quiet worker who likes a secure, harmonious

environment. She is family oriented, as is readily apparent by the family pictures on her desk. Mary Ann does things the way they've always been done and resents sudden changes. But Mary Ann puts forth a concentrated effort on everything she does. She is loyal and trustworthy.

### The Analyzer

Gail is an accountant. She likes working with numbers, because numbers are precise and accurate. Gail is systematic, detailed, and thorough in her work. She sometimes takes longer to complete a project than others, because she wants to gather all the information she can before making a decision or drawing conclusions. But when Gail finishes, her work is right. Gail is a perfectionist. She is task oriented and prefers to work with facts rather than people.

To some of her coworkers, Gail seems cool and distant. That's because she is a very quiet person and doesn't seek out relationships. Some people have gotten to know her better and know that she is a good listener and nonthreatening in her relationships.

Gail comes to work early and stays late. She is industrious, not the coffee-drinking, chatty type. Her desk and office are well organized, like her overall approach to life.

Gail believes that rules are to be followed. She resents the free-wheeling attitude of employees who take long lunch hours or who congregate in groups and waste away the afternoon because the boss is out. Conservative by nature, Gail avoids confrontation or involvement. Rather, she concentrates on her own work.

### The Controller

Roger, a mechanical engineer, likes to take charge. He is results oriented and makes decisions quickly and easily. He sets goals and works toward them energetically and aggressively. Roger is ambitious and strives toward upward mobility in the company, his eyes set on a managerial position with authority and responsibility.

An independent person, Roger resents it when his supervisor tries to impose any kind of control over Roger's work. He's not afraid to confront his supervisor or others about their opinions. Roger likes lots of variety in his work. He is assertive and competitive.

Roger's fellow employees often see him as rude, domineering, and inconsiderate of others. His single-minded pursuit of his goals reinforces an impersonal attitude. Roger has no patience with others who are slow to act or ambivalent in their behavior.

Roger gets the job done. He is willing to take risks and even to bend the rules as necessary to accomplish his task. Roger likes difficult and challenging assignments. He is very business-like in all his endeavors.

Figure 1 summarizes the main characteristics of these four behavioral tendencies. Although each person demonstrates some of the behavioral tendencies in each group, he or she exhibits stronger characteristics in one or two of the groups. Each of us can recognize these behavioral tendencies in ourselves or in our fellow workers or associates. However, recognizing these behavioral tendencies has little value unless we know how to apply them. In the next section, I present guidelines for applying our understanding of behavior to



Promoter	Supporter
<ol style="list-style-type: none"> <li>1. People Oriented</li> <li>2. Emotional and Verbal</li> <li>3. Disorganized</li> <li>4. Optimistic</li> <li>5. Persuasive</li> </ol>	<ol style="list-style-type: none"> <li>1. Conservative</li> <li>2. Team Person</li> <li>3. Family Oriented</li> <li>4. Loyal</li> <li>5. Predictable</li> </ol>
Analyzer	Controller
<ol style="list-style-type: none"> <li>1. Perfectionist</li> <li>2. Conscientious</li> <li>3. Systematic/Factual</li> <li>4. Industrious</li> <li>5. Conventional</li> </ol>	<ol style="list-style-type: none"> <li>1. Domineering</li> <li>2. Self-Assured</li> <li>3. Aggressive/Competitive</li> <li>4. Risk-Taking</li> <li>5. Results Oriented</li> </ol>

Source: based on The Persona Matrix System. 1981. Minneapolis, MN: Performax Systems International, Inc.

Figure 1. Characteristics of the 4 Behavioral Tendencies

technical writing.

### Application of the Behavioral Component to Technical Writing

Based on the characteristics of the four behavioral patterns described in the previous section, we can now examine the needs of individuals in each group and select writing strategies to satisfy those needs. Following are guidelines for adapting writing to each of the four behavioral traits.

#### Promoters

Promoters are friendly and people oriented. A personal, informal tone appeals to promoters. Using human interest stories and even human drama when appropriate will motivate promoters, who find facts and statistics boring. Creating a scenario will help promoters understand the message as well as hold their attention. Whenever possible, the writer needs to explain how a recommended course of action will benefit promoters or others with whom they work. The following introduction to Joye's article "Word Processors for Attorneys" (Kolin and Kolin 1985, 40) would appeal to promoters:

2001. It is not so far away anymore. What will it be like practicing law then? If technological growth in the next twenty years is anything like that in the last twenty, not only will attorneys have to have their skates on, but the skates also will have to be jet propelled.

Trial attorneys must keep up with the times if they are to service their clients as their clients expect and demand. The written word must be produced faster, cheaper, and in greater quantities. Change is inevitable.

This article will acquaint trial lawyers with some of the technology--specifically office automation--

that can make their work a little easier.

The one-word sentence---a date---followed by a question sparks the reader's interest. The imagery of attorneys on jet propelled skates keeps the writing lively and fun to read. Joye follows his introduction with a history of word processing technology labeled "Origin of the Species." By now the promoter knows that he/she won't be bored by dry facts.

Writing style for promoters should be simple, straightforward, and in the active voice. Sentences and paragraphs should be short. Because promoters tend to skim reports, informational headings and subheadings improve the chances of communicating key points. Lists make skimming easier for promoters, but too many lists can create a grocery list effect. Variety is important in keeping promoters' interest.

Promoters put a lot of weight on the opinions of specialists on the topic. For example, promoters are more likely to trust the results of studies done by consulting firms rather than in-plant studies. Thus, evidence should be based on outside authority whenever it is available.

Promoters often skip the body of a report because of the detail. Necessary details should appear in the body, but as much of the supporting information as possible should be relegated to an appendix. The report should be short; two or three short reports are more digestible than one long report. The writer should highlight results and recommendations in the abstract---often the only part of the report that promoters will read thoroughly.

The writer needs to outline a specific course of action in the

recommendations section with immediate incentives for completing the tasks. This course of action should be explained in concrete terms. The final section of Joye's article, "Word Processors for Attorneys" (Kolin and Kolin 1985, 44-45) illustrates the use of a step-by-step list to facilitate action: (See the complete article in Appendix A.)

These three steps will make the choice easier:

1. Consult the word processing feature analysis charts found in computer and word processing publications...
2. Find out which of those machines are available in your geographical area...
3. Obtain a list from those vendors of the law firms in your area that have their equipment...

Promoters who read this article know how to begin selecting a word processor. To ensure that they get the message, a summary of the actions they need to take should appear in a cover memo or letter.

Promoters are people-oriented, not task oriented. They respond best to short reports, laid out so they are easy to skim, with human interest (and sometimes even humor) incorporated.

### Supporters

Like promoters, supporters need a friendly, personable environment, so the tone of any writing should be personal and informal. Human interest stories, human drama, and scenarios are all useful methods to create a warm, secure atmosphere.

The report should follow a traditional format (introduction, method, results, discussion of results, conclusion, recommendations). Supporters are slow to change and prefer to stick with the established procedures. Because they are patient and concentrate on their work, they will read the entire report.

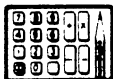
Supporters want the writer to answer the questions "how" and "why."

The information needs to be presented logically. How did the writer investigate the subject? What methods did he or she use or what procedures did he or she follow? Why has the writer drawn those conclusions? Evidence to support conclusions should be clear and logical. Supporters look for practical solutions involving little risk.

If the writer recommends policy or procedure changes in the report, he or she should justify them clearly. Supporters need assurances that suggestions for change have minimal risks and that they will benefit the company and the supporters themselves. The writer should outline clear, specific solutions to any problems and explain the role of supporters.

The cover memo or letter should explain any goals and the actions supporters need to take to accomplish those goals. The writer needs to praise past activities or involvement by supporters. When appropriate, an acknowledgments section can be included to commend supporters for their contributions. Supporters work hard and consistently, especially when they receive positive feedback about their efforts. Supporters get the job done.

The memo in Figure 2 is a good example of techniques for writing to supporters. It answers the questions "how" and "why." In addition, it praises two board members and an employee of the park system, all of whom are likely to read the report. The writer states the recommendation in terms of the wishes of the parents who were surveyed, rather than as her own recommendation. Supporters, who are family- and people-oriented, are more likely to respond to recommendations from this source. Written in first person, the memo is friendly and



## DATA SURVEYS, INC.

2345 West Highway 98A  
Milwaukee, WI 56743

May 1, 1984

Mayor Warren P. Green  
Office of the Mayor  
Town Hall  
750 11th Avenue  
Porterville, WI 58439

Subject: Public Parks Report

Dear Mayor Green:

I am submitting the accompanying report "The Accessibility of Public Parks in Porterville, Wisconsin" for your review and approval. This report was commissioned by the City Council last December to determine if parents in Porterville think a new public park is necessary and feasible. We sent a questionnaire to over one hundred parents in the Porterville area to survey their opinion.

This report discusses the respondents' backgrounds and ideas on the importance of a new public park. It includes the respondents' opinions on park facilities, location, and use. The parents do not believe that Porterville's existing parks offer ample, accessible recreation opportunities and feel a new public park should be constructed within the next year.

In preparing my report I was assisted by two members of the Board--Mary Ellen Arp and David Whitworth. Patricia Hess of the Porterville Park System granted me three helpful interviews.

If you have any questions or comments about the report, I would be happy to discuss them with you. Please write or call me at 756-9800, ext. 345.

Sincerely yours,

*Janis Monk*  
Janis Monk

Encl. "The Accessibility of Public Parks in Porterville, Wisconsin"

Source: Kolin, P.C. and J.L. Kolin. 1985. Models for Technical Writing. New York: St. Martin's Press, 416.

Figure 2. A Letter Written for Supporters

personable.

Appendix B provides another example of technical writing for supporters. This proposal emphasizes security, low risk, good service, and reasonable prices. All of these factors appeal to the conservative nature of supporters.

### Analyzers

Analyzers tend to be perfectionists. They want a lot of information, so they can evaluate it themselves. When analyzers request reports, they are not looking for a short memorandum report. They want a formal report that is thorough, detailed, and highly structured.

The introduction needs to come right to the point and stick to business. Only essential background information should be included. The writer needs to list objectives clearly, spell out the organizational plan for the report, and include a table of contents that shows this organizational plan.

Analyzers will look for an ordered and disciplined approach that shows that the writer has analyzed the data thoroughly. Therefore, the writer should present accurate, thorough, and specific data in the body of the report to support his or her ideas. Raw data and other supporting material should appear in appendixes, but the majority of the information belongs right in the report. The writer should list pros and cons to lend credibility to explanations. Alternatives should be presented and the alternative that the writer selects needs to be justified with solid, practical evidence. Illustrations can explain and reinforce main points.

The writer should spell out conclusions and recommendations

step by step. Whenever appropriate, the report should include a timetable for completing a course of action. Analyzers need guarantees that little risk is involved, or if some risk is necessary, they want to know the short- and long-term benefits. The entire presentation needs to be logical and well organized in order to present the writer's case effectively.

The Executive Summary shown in Figure 3 is a good example of a well organized, thorough report summary that would appeal to analyzers. It presents and discusses briefly six options and then recommends Option 1. Although this summary is rather long, it would appeal to analyzers who want lots of information. The report itself appears in Appendix C. Like the Executive Summary, it is thorough, detailed, and highly structured.

### Controllers

Like analyzers, controllers are task oriented. They are highly disciplined and goal oriented. Thus, the report should come right to the point and identify the problem and solution. Major questions controllers ask are "What is the bottom line?" "How much will it cost?" "Will it work?" The writer should explain objectives clearly, and present facts and figures in a well-organized package. Efficiency and brevity are important to controllers. Nonessential details belong in an appendix.

The writer needs to include a summary or abstract at the beginning of the report. This summary should be concise. It should clearly summarize objectives, results, and options for action.

Writing to controllers can be complicated by the fact that these



## EXECUTIVE SUMMARY

The Alderson Task Force was appointed in June 1980 to explore the feasibility of alternative uses for the Federal Correctional Institution (FCI) at Alderson.

Analysis of relevant data and a review of related issues concerning Alderson led to the development of six options for alternative use of FCI, Alderson.

*Option 1: Convert the Addiction Research Center adjacent to FCI, Lexington to a secure, single-sex facility; change the proposed mission of Danbury Satellite Camp to a camp for women; and change the mission of FCI, Alderson to a co-correctional facility.*

Option 1 favorably addresses several of the issues raised concerning FCI, Alderson. Under this plan, improvements are anticipated in visiting, proximity to release destination, and programs and services. The issue of confining female inmates in oversecure environments is largely eliminated. Capital costs are minimal and operating costs will be less than the current level at FCI, Alderson.

*Option 2: Continue to operate FCI, Alderson at its present level and include the establishment of a camp for women in the long-range planning process.*

Option 2 proposes no change in the status of FCI, Alderson, but does suggest long-range planning for a camp facility. The establishment of a camp for women would result in favorable changes in accessibility for visitors, proximity to release destination, and a less secure environment. It would also result in excess capacity and, therefore, a more costly operation.

*Option 3: Close FCI, Alderson and build a 500-bed replacement facility.*

FCI, Alderson could not be closed without opening another facility for female prisoners. The construction of an appropriate replacement facility in an appropriate location could improve opportunities for visiting. The location of any single institution will be closer for some people and farther for others, but a facility in or near the Northeast Corridor will place the greatest number close to their release destination. Program levels would remain comparable to those at Alderson. Costs for the construction of a new facility would run approximately \$26 million, although operating costs would be somewhat less than Alderson's.

*Option 4: Make no major changes at FCI, Alderson but increase the use of Community Treatment Centers for women.*

Option 4 would improve visiting opportunities and closeness to home for those women with extended stays in Community Treatment Centers; these women would also be in less secure facilities. There would, of course, be no change for the women remaining at Alderson. This option is not a realistic one because the Community Treatment Center (CTC) placements at Alderson already meet or exceed existing Bureau policy on CTC use.

Source: Kolin, P.C. and J.L. Kolin. 1985. Models for Technical Writing. New York: St. Martin's Press, 322-324.

Figure 3. An Executive Summary Written for Analyzers

Figure 3 (Continued)

*Option 5: Convert the Addiction Research Center adjacent to FCI, Lexington to a secure, single-sex facility, acquire a surplus camp facility, and change the mission of FCI, Alderson to a co-correctional facility.*

Option 5 is similar to Option 1 except for the acquisition of surplus property for a camp. The unavailability of a surplus camp facility in the Northeast makes this option infeasible at this time.

*Option 6: Make no major changes in FCI, Alderson but increase the number of women placed in State institutions, including the District of Columbia.*

Option 6 would improve visiting and place women closer to home, but programming and services would be reduced in both quantity and quality. In most cases women would be confined in facilities that are even more secure than Alderson. In addition, overcrowding generally exists in those States which do have institutions for women. This option is infeasible because of the small number of appropriate State facilities.

### **Recommendation**

The Task Force recommends implementation of Option 1; it offers the best possible solution to the issues and problems identified at FCI, Alderson.

controllers often have predetermined the results of a report they have requested. They want the writer's findings to confirm their beliefs and to justify their actions. If the writer's results are not the same as the controllers' preconceived results, the writer needs to persuade the controllers not that the writer's answer is right, but that this answer gives the greatest potential of quickly and efficiently solving the problem and making the controllers look good at the same time.

The writer should concentrate on the results and present alternatives or options in any recommendations. Controllers like to make the decision themselves, so the recommendations should be phrased as suggestions. Controllers want to know the likelihood of success for each option. But they are willing to take risks and try new ideas, so the writer can suggest untried paths. Recommended action should be tied to the original goals stated at the beginning of the report.

The conclusions and recommendations in Figure 4, taken from a feasibility report for buying a cassette tape recorder, are an example of good writing for controllers. (The complete report appears in Appendix D.) The author summarizes and compares the qualities of all four recorders in the conclusions. In his recommendations, he offers two options and leaves the decision to the reader based on the money available to purchase a cassette tape recorder.

The report in Appendix D is laid out effectively for controllers. It presents the key points (Introduction, Factual Summary, Conclusions, and Recommendations) in four pages. All the detail appears in Annexes, which are seven pages long. The controller can get right to the point and need not wade through eleven pages to get to the conclusions

## CONCLUSIONS

1. Four portable cassette tape recorders are available that meet minimum specifications.
2. On the basis of the most important criterion, frequency response, the Nakamichi is the best choice.
3. On the basis of cost, the Marantz is the best choice.
4. On the basis of cost and frequency response, the AIWA may be a good compromise choice.
5. On the basis of size and weight, all the recorders are at least acceptable, but on this criterion, the AIWA is the least desirable.
6. The results of the battery requirements comparison are too ambiguous to use as a basis of comparison for this study.
7. None of the recorders is clearly superior, but because frequency response is considered most important in this study, the Nakamichi 550 may be the best buy. However, if cost and frequency response are considered equally important, and size and weight are not considered, the AIWA TPR-945 would be the best buy.

Source: Houp, K. W. and T. E. Pearsall. 1984. Reporting Technical Information. 5th ed. New York: Macmillan Publishing Company, 495-496.

Figure 4. Conclusions and Recommendations for  
Controllers

Figure 4 (Continued)

## RECOMMENDATIONS

On the basis of this study I recommend the following to

EFW:

1. If sufficient money is available, buy the Nakamichi 550 portable cassette tape recorder.
2. If the Nakamichi is considered too expensive, buy the AIWA TPR-945.

and recommendations. Controllers want to know the bottom line, and they want the information presented efficiently and concisely.

### Summary

Using writing strategies that apply an understanding of behavioral traits of readers can increase the effectiveness of technical writing. Figure 5 summarizes writing strategies for all four behavioral tendencies that I have discussed. The four appendixes that follow this report provide four different documents that suit the needs of readers with four different behavioral patterns. Writers should use the information in this chapter in conjunction with the other approaches to audience analysis and adaptation discussed in Chapter II.

Promoters	Supporters
<ol style="list-style-type: none"> <li>1. Choose a personal, informal tone</li> <li>2. Keep the report short and highlight key points with lists or informational headings</li> <li>3. Present supporting evidence of authorities in the field</li> <li>4. Explain concretely how to implement recommended action</li> <li>5. Give incentives for completing recommended tasks</li> </ol>	<ol style="list-style-type: none"> <li>1. Choose a personal, informal tone</li> <li>2. Answer "how" and "why" questions</li> <li>3. Minimize risks</li> <li>4. Praise their contributions</li> <li>5. Outline specific solutions to any problems</li> </ol>
Analyzers	Controllers
<ol style="list-style-type: none"> <li>1. Provide lots of accurate, specific detail</li> <li>2. Stick to business</li> <li>3. Outline objectives clearly</li> <li>4. Present pros and cons</li> <li>5. Spell out conclusions and recommendations step by step</li> </ol>	<ol style="list-style-type: none"> <li>1. Come right to the point</li> <li>2. Answer "What is the bottom line?"</li> <li>3. Write efficiently and concisely, placing supportive detail in appendixes</li> <li>4. Present arguments logically</li> <li>5. Offer options so they can make the final decisions themselves</li> </ol>

Source: based on Strategies for blending and capitalizing. 1983.  
The Personal Profile System Manual. Minneapolis, MN:  
 Performax Systems International, Inc., 57.

Figure 5. Writing Strategies Based on Behavioral Tendencies of Readers

## CHAPTER IV

### CONCLUSION

The purpose of technical writing is to help the reader perform a task. In order to do that, writers must understand who the reader is, why the reader is reading, what the reader already knows, and what the reader needs to know. As the Review of the Literature showed, technical writers have traditionally gathered objective data about the reader, including such information as age, sex, educational level, cultural/ethnic backgrounds, and occupation/job title, and subjective data about the reader's dominating beliefs or opinions; his/her attitude toward the writer, the topic, and the writer's purpose; and the reader's value system. Each of these determinations is based on writers' judgments of the reader and the writing situation.

Current approaches to audience analysis and adaptation do not explain how to apply knowledge of the reader's behavior (the subjective data) to the writing situation. In this thesis, I have presented a behavioral component for technical writing. This behavioral component does not replace any other models of audience analysis and adaptation. Rather, when used in combination with other approaches discussed in Chapter II, this component can help the writer understand his or her audience and suggest writing strategies that will assist the reader in completing the task under discussion.

I have described four behavior patterns within the work



environment: the promoter, the supporter, the analyzer, and the controller. An understanding of these four behavioral patterns can help technical writers to determine the content, form, tone, and the appropriate point of view for their writing.

Promoters and supporters prefer a personal, friendly tone, whereas analyzers and controllers want an impersonal, factual tone. For persuasive writing, writers need to present pros and cons for analyzers, but provide testimonials of authorities for promoters. If technical writers know that their supervisor is a supporter or analyzer, writers will want to minimize risks to the company. On the other hand, controllers like a challenge and will take risks. Promoters and controllers like shorter reports, with all details presented in appendixes. Supporters and analyzers prefer to see all supporting material within the body of the report, so they expect longer reports. Thus, an understanding of behavioral traits can help writers plan and structure reports.

The behavioral component assumes that writers know the reader. Because much technical writing occurs in an organizational content, technical writers often know the primary and secondary audiences and can observe their behavioral patterns. Where this is not true, writers must look for other clues, such as clues in correspondence from customers. Sometimes writers must rely on objective data or generalizations about audience categories (Pearsall, 1984).

What about writing to multiple audiences? For example, if technical writers are developing manuals to accompany a product that will be purchased by many types of people, how will writers know what strategy to use? Surveys of the audience can often provide

general tendencies--for example, a conservative buyer versus an innovative buyer. The nature of the product often provides clues about the sort of person who buys it. If in doubt, technical writers can write manuals with different sections addressing the needs of different types of readers.

I recommend more research in the corporate environment to test the effectiveness of audience analysis and adaptation with a behavioral dimension. Researchers could evaluate readers to determine which of the four behavioral patterns they belong in. Then the researchers could show individuals representative of each behavioral pattern a report written four different ways for four different behavioral patterns and see if the report the reader chose corresponded to his or her behavioral pattern. Additional research could investigate how to best combine the information about behavior and the other approaches to audience analysis.

No longer can writers in industry assume that filling out a worksheet defining the age, education, experience, and role of the reader will give enough information to write to a real audience. In the workplace where writers know the people they work with, they need to include behavior analysis as part of their repertoire of audience analysis techniques. Only then can technical writers satisfy the communication needs of their readers.

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APPENDIX A

AN ARTICLE ORIENTED TO PROMOTERS

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# Word Processors for Attorneys

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*Reese I. Joye, Jr.*

2001. It is not so far away anymore. What will it be like practicing law then? If technological growth in the next twenty years is anything like that in the last twenty, not only will attorneys have to have their skates on, but the skates also will have to be jet propelled.

Trial attorneys must keep up with the times if they are to service their clients as their clients expect and demand. The written word must be produced faster, cheaper, and in greater quantities. Change is inevitable.

This article will acquaint trial lawyers with some of the technology—specifically office automation—that can make their work a little easier.

## ORIGIN OF THE SPECIES

Trial attorneys benefit tremendously from automated office equipment; time is saved not only for attorneys, but also for support personnel. This increases overall productivity, which reduces costs. Office automation takes several forms: telephones, dictation equipment, copiers, typewriters, and calculators. Today, the office is in the era of the word processor and the computer.

How did the word processor evolve?

Word processing technology is only about 17 years old and is a combination of two older technologies: the typewriter and the computer. Every two years, technological knowledge doubles itself in new and better features.

The typewriter was invented in 1874 by Christopher Shoals. Typed correspondence, although produced at a slower rate than handwritten copy, brought prestige to many offices that had used clerks to hand-write documents. Over the years typewriters became more sophisticated than Shoals' clumsy typing machine, and gradually they became a productive, efficient part of the work environment. Today an office is not found without one, and electric, correcting, and memory typewriters are commonplace.

The first commercial computer went into operation in 1951; it also has undergone a transformation resulting in a more practical size and weight. Computer technology, and specifically the microprocessor, is now the core of many other products, such as calculators, word processors, communication and video equipment.

## EFFECTIVE MANAGEMENT TOOL

A word processor, however, is not simply a typewriter with computer pieces. It can be a management tool as well by taking advantage of different software and hardware features. Programs can be adapted easily to serve needs exclusive to attorneys. Some of the things a word processor can do quickly are calendars, case control, time control, client's ledger, general ledger, telephone charges, and billing.



*Calendars.* Every trial attorney is aware of the demand by professional liability insurers for deadline control. This can be accomplished very easily with a word processor. Slips of paper 1½" x 8" are printed with the following categories stretching across the slips' 8" width:

1. Deadline Date.
2. Case.
3. Action.
4. Attorney.

These slips are filled in by attorneys and support personnel and collected at the end of each day for each item or deadline needing attention or action. The first thing the word processing operator does the following day is "call up" the calendar on the CRT screen and insert the data from the slips where appropriate. An 8½" x 14" sheet is printed out and distributed each morning to everyone in the office; it contains a two- to three-week schedule of commitments, deadlines, appointments in and out of the office, seminars, personal appointments, holidays, office conferences, trials, etc. Even when someone is sick, he or she calls the word processing operator to get that information on the day's calendar. With this system, everyone in the office knows where everyone else is and what deadlines need to be met.

*Case control.* Does an attorney want to know how many different types of cases came into the office in the last 30 days, or since the first of the year, or last year? How many cases are open or closed at a given time? How does he or she keep up with conflicts of interest within the firm?

This is possible with software "sort" capabilities. Although many different variables can be used, there are seven bits of information fed into the word processor for this application:

1. Date opened.
2. File number.
3. Client.
4. Adverse party.
5. Type of case: will, domestic, tort, criminal, etc.
6. Attorney assigned.
7. Status: open or closed.

The word processor can sort this information by the clients' or adverse parties' names alphabetically, advise which cases each attorney has assigned and whether they are open or closed, and how many cases the firm has or has had for a particular client. The possibilities are unlimited. The word processor can sub-sort the types of cases into as much detail as desired, for example:

"Tort—Automobile Collision—Rear End—Passenger Injury."

The word processors can print out a list of the cases according to the length of time they have been open in the office; the word processor also can warn when the statute of limitations is about to run out.

*Time control.* Each time an income survey is published, attorneys are admonished that those who keep accurate account of their time, bill more and therefore generate higher incomes. There are hundreds of systems for keeping track of time. However, they all require the following information:

1. Date.
2. Client.
3. Time spent.

4. Services provided.
5. Attorney performing services.

If these five items are input into a word processor that has "sort" and "math" capabilities, the result will be bills or statements produced automatically in addition to weekly, monthly, or quarterly printouts of who is producing what for the office. The word processor can sort by client, dates, attorney, and type of services performed.

The billing information can be coupled with the *Case control*, which will record how much income each attorney has generated over a given period of time as well as how much income the firm realizes in particular types of cases.

If the date of preparation and a statement number is entered when statements are being prepared, accounts receivable can be monitored easily. The word processor can be programmed to diary-aged accounts every 30 days.

*Client's ledger.* The next logical step is to input monies received against the billing and also to input costs paid by the client. This, then, results in one-half of the bookkeeping functions being performed by the word processor.

*General ledger.* Since keeping records of income and expenses is so easy, there is no reason why the word processor cannot be programmed to provide a general ledger for the law office's bookkeeping. The procedure is virtually the same. Simply couple the "profits" from the *client's ledger* format above and program the office's cost of operation, and now the entire bookkeeping function is available weekly, monthly, and at the end of the year for income tax purposes.

*Telephone charges.* In order to get "time and charges" recorded, an operator must assist in making the call. This type of call costs the client at least double and, in some cases, triple the cost of station-to-station, direct-dialed calls. The majority of attorneys delegate the receipt of time and charges from the operator to a telephone receptionist or secretary. It is much easier to write the following down in a log kept by the telephone:

1. Date.
2. City called.
3. Telephone number (and area code).
4. Client's name.
5. Attorney placing call.

This information can be entered into the word processor and sorted out at the end of the month by day, client, city, and attorney; or the telephone numbers can be arranged by the word processor in numerical order in a matter of minutes. This will greatly assist the bookkeeper, receptionist, or clerk in matching the charges to each client's ledger sheet. The telephone bill can be input into the word processor with the number, date, city, and charge, and a program can be written to match the charges to the proper client's ledger sheet.

## AN INDIVIDUAL CHOICE

The needs of a particular law office must be evaluated to determine exactly how a word processor can benefit it. Some present work habits must be considered before the decision is made to purchase word processing equipment, such as:

1. Average length of documents typed in the office.
2. Frequency or repetitiveness of certain documents, phrases, names, or words.
3. Complexity of the documents.
4. Number of documents produced each day.
5. Demand for perfection in documents.
6. Typing skill of the secretary.
7. Competition.

There are approximately 70 word processors on the market with differing features, capabilities, and prices. Some are pure word processors, some are word processors/quasi-computers, and some are computers with word processing capabilities, but almost all word processors consist of four basic hardware parts: the cathode ray tube (CRT) screen; one or two disk drives; a printer; and a keyboard.

*CRT screen.* A full-page display is the easiest with which to work. Studies have indicated that a full page with black characters on a light background allows the operator to perform on the system with minimum eye fatigue.

*Disk drives.* Most systems use two disk drives with a total document capability at any time of 600,000 characters, or 300 pages. Of course, there may be any number of diskettes in the law office library that are being worked with, and the operator may change to the appropriate one when necessary. Floppy disks are the latest and most inexpensive storage media, about 7 cents per page, for word and data processing.

*Printer.* Most vendors offer impact printers capable of printing up to 540 words per minute while the operator uses the CRT screen for another function. With an acoustical hood, the printer is quiet and non-distracting.

*Keyboard.* The keyboard is designed the same as a typewriter keyboard with the exception of some special-function keys usually located on either side of, or above, the letter keys.

There are many different capabilities of the word processors despite their similar hardware design. Features to make note of include:

*Software-based.* A software-based word processor can always be upgraded to include the most up-to-date word processing features, eliminating the need to purchase costly hardware.

*Simultaneous input/output.* This means that the system can print a document at the same time the operator is typing other documents on the CRT screen.

*Hyphenation selection.* A good word processor should have hyphenation selection capabilities. The operator can select between manual hyphenation, automatic word wrap-around, and fully automatic hyphenation according to dictionary spellings.

*Automatic centering and underlining.* With the touch of one or several keys, many word processors will automatically center a line of copy on the CRT screen, or automatically underline it as it is being typed.

These are basic text-editing features that speed up the preparation of documents. Other, more complex features to make note of are: automatic decimal alignment and ten-key calculator pad; automatic paragraph assembly; program and insert features; text merging; and selection and sort.

## THE SELECTION PROCESS

These three steps will make the choice easier:

1. Consult the word processing feature analysis charts found in computer and word processing publications. These charts list hardware and software features of the equipment and offer price comparisons.

2. Find out which of those machines are available in your geographical area. If a certain machine is neither sold nor serviced locally, it should not be considered. Quick and reliable service is a must.

3. Obtain a list from those vendors of the law firms in your area that have their equipment. Determine which of the firms are most similar to yours in size and kind of practice. Take time to visit the firms and get a firsthand look at the equipment and operation of it. Avoid being the first on your block with a new toy—it could be a costly mistake.

Once a potential purchaser of word processing equipment is familiar with these features and has done the homework, selection of the equipment is the final, and often the easiest, step.

Securing the right word processor and using it properly can be more rewarding to you as a trial attorney than any case you have ever won.

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Source: Kolin, P. C. and J. L. Kolin. 1985. Models for technical writing. New York: St. Martin's Press, 40-45.

## APPENDIX B

### A PROPOSAL ORIENTED TO SUPPORTERS

## HIGH TECHNOLOGY CORPORATION

706 BROADWAY DRIVE • P.O. BOX 1528  
HATTIESBURG, MISSISSIPPI 39401  
(601) 544-7711

November 25, 1983

Ms. Regina L. Gordon-Muñoz  
Manager  
National Home Life Insurance Company  
P.O. Box 67842  
Hattiesburg, MS 39401

Dear Ms. Gordon-Muñoz:

In response to your RFP of November 10, 1983, I am pleased to submit our bid for a maintenance contract for your 1984-1985 fiscal year. We would like to use our 50 years of experience in office equipment sales and service to assist you as we do 37 other local firms. Because of this previous experience, HTC can give you superior service at a cost lower than our competitors'.

Our goal is to keep your office functioning smoothly with little interruption. Since our service department has the latest diagnostic equipment, any problems with your office equipment can be discovered and corrected quickly and efficiently, resulting in less downtime for your machines.

For our client's benefit, we keep a history, similar to a doctor's patient chart, on every one of the machines we service. That way any unusual problems can be identified and their cause eliminated. The enclosed sample chart [not included] will give you an idea of the care we will take in maintaining records on your equipment.

You will find our service contract especially cost effective. Unlike many of our competitors, when replacing worn or damaged parts we supply new ones at no additional expense to National Home Life. You will be spared the extra expense and inconvenience, therefore, of having to negotiate separate service and sales contracts for the same piece of office equipment.

These are just the highlights of our service agreement. Let me outline other advantages you would have in accepting our service agreement.

Ms. Regina L. Gordon-Muñoz  
November 25, 1983  
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#### Our Qualified Personnel

Because our service department of seven technicians is the largest in the area, you will be assured of receiving the attention you expect. These technicians have a total of 64 years of on-the-job experience. The department is headed by Wayne Hurst, who has 23 years of experience in servicing office equipment, nine with IBM as southeastern Regional Manager. All our technicians are factory trained and have earned high marks for proficiency. At least every two months they update their knowledge by learning, through in-house programs, about the very latest modifications and retrofits in office repair techniques, specifically those on Savin copiers, A. B. Dick equipment, Olivetti typewriters, and all makes of dictaphones. Whenever necessary, our technicians receive special training as well. For example, last March the Nashua Corporation flew in an engineer to instruct us on the changes which needed to be made when one of our customers, the Lange Coal Company, switched from Savin to Nashua parts on its Savin copiers.

#### Fast Response Time

Our service technicians are radio-dispatched to respond faster to your call. When a call is made to our main office, we send the technician nearest you. Because of our radio-dispatch system, most of our calls are handled within an hour, some within as little as fifteen minutes. As a further service to you, all our vehicles carry 90% of the parts most often replaced so that each technician is ready to respond to your emergency calls at any time.

#### Zero Defects Program

This program was devised to alert us to repeat calls from a customer. Should we receive a call on a machine we have serviced during the previous seven days, the call is logged onto a special analysis board. The service supervisor will then check the initial call to see if both service calls were made because of the same or a similar problem. If the original problem has persisted, both the service supervisor and the original technician will respond to correct it. At that time we will determine if the problem resulted from customer error or a defective part. This return service is

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needed on fewer than 1.8% of our calls, but our objective is to reduce that percentage to zero.

#### Availability of Parts

As an area Savin dealer, we have the largest supply of Savin parts in Southern Mississippi. We also stock parts from such manufacturers as A. B. Dick, Olivetti, IBM, and Masters. Many times, however, we find that other supply and engineering firms have modifications superior to those you may be using. Although these parts may cost us more, we will place them when necessary on any of your machines under contract. Through precise records and a thorough knowledge of these specific parts, we are able to offer less downtime and fewer service calls. In addition, we can frequently determine if a part will fail after a certain volume is reached and replace it before this occurs. This practice will keep your machines functioning trouble-free and sustain high productivity.

#### Procedures

As part of our service contract for 1984-1985, we will perform the following procedures on each of the machines listed.

#### Savin Copiers

We will routinely inspect each Savin copier a minimum of once a month to be sure that it is giving you maximum copy quality. We will also completely examine each of your Savin copiers as often as outlined in the Savin Service Manual and will do the following:

1. replace any worn or damaged parts (e.g., scraper blades, reverse rollers, drums, and the venturi)
2. rebuild the motor bearings, hoses, and scraper blades where necessary
3. make adjustments necessary for proper use of the toner.



Ms. Regina L. Gordon-Muñoz  
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#### Mimeographs and Duplicators

We will pick up all mimeographs and duplicators at least once during the contract year and examine each machine. As part of our service to you we will:

1. replace the feed wheels in the ink pad, the drum wick, and any other worn or damaged part
2. make all adjustments recommended by the A. B. Dick Service Manual and its updates
3. replace any other parts as required.

#### Typewriters, Mechanical Calculators & Adding Machines

These machines will be periodically inspected, and as part of the service contract we will:

1. provide chemical cleaning in our shop for any typewriter requiring it
2. recondition and change all worn or damaged parts on typewriters brought in for chemical cleaning
3. replace any parts on calculators and adding machines as needed at no additional charge.

#### Norelco Dictation Equipment

We will periodically inspect all dictating machines as part of our guaranteed maintenance program.

#### Costs

The rates for these services for one year are listed below:

8 Copiers @ \$600.00 each	\$ 4,800
15 Mimeo machines @ \$50.00 a machine	750
75 typewriters @ \$50.00 a machine	3,750
30 dictaphones @ \$28.00 a unit	840
	<hr/>
	\$10,140


Ms. Regina L. Gordon-Muñoz  
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I believe that you will find these rates are more reasonable than, and less likely to change as often as, those of our competitors. While many other companies have increased their charges from 50% to 150% in the last eight years, HTC has increased an average of less than 28% for the same period.

Thank you for considering this proposal. I hope it has given you the information you need about the quality and quantity of the work we want to perform on the office equipment at National Home Life. Should you accept our proposal, please sign a copy of this letter in the space below.

If you have any questions, please call me at 564-4600, extension 23.

Sincerely yours,



Jerry Golden  
General Manager

I accept HTC's maintenance agreement for the fiscal year 1984-1985.

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Regina L. Gordon-Muñoz  
Manager  
National Home Life Insurance Company  
Hattiesburg, MS 39401

Source: Kolin, P. C. and J. L. Kolin. 1985. Models for technical writing. New York: St. Martin's Press, 282-286.

## APPENDIX C

### A FEASIBILITY STUDY ORIENTED TO ANALYZERS

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# A Feasibility Study of Alternative Uses for the Federal Correctional Institution at Alderson, West Virginia

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*Bureau of Prisons*

## EXECUTIVE SUMMARY

The Alderson Task Force was appointed in June 1980 to explore the feasibility of alternative uses for the Federal Correctional Institution (FCI) at Alderson.

Analysis of relevant data and a review of related issues concerning Alderson led to the development of six options for alternative use of FCI, Alderson.

*Option 1: Convert the Addiction Research Center adjacent to FCI, Lexington to a secure, single-sex facility; change the proposed mission of Danbury Satellite Camp to a camp for women; and change the mission of FCI, Alderson to a co-correctional facility.*

Option 1 favorably addresses several of the issues raised concerning FCI, Alderson. Under this plan, improvements are anticipated in visiting, proximity to release destination, and programs and services. The issue of confining female inmates in oversecure environments is largely eliminated. Capital costs are minimal and operating costs will be less than the current level at FCI, Alderson.

*Option 2: Continue to operate FCI, Alderson at its present level and include the establishment of a camp for women in the long-range planning process.*

Option 2 proposes no change in the status of FCI, Alderson, but does suggest long-range planning for a camp facility. The establishment of a camp for women would result in favorable changes in accessibility for visitors, proximity to release destination, and a less secure environment. It would also result in excess capacity and, therefore, a more costly operation.

*Option 3: Close FCI, Alderson and build a 500-bed replacement facility.*

FCI, Alderson could not be closed without opening another facility for female prisoners. The construction of an appropriate replacement facility in an appropriate location could improve opportunities for visiting. The location of any single institution will be closer for some people and farther for others, but a facility in or near the Northeast Corridor will place the greatest number close to their release destination. Program levels would remain comparable to those at Alderson. Costs for the construction of a new facility would run approximately \$26 million, although operating costs would be somewhat less than Alderson's.

*Option 4: Make no major changes at FCI, Alderson but increase the use of Community Treatment Centers for women.*

Option 4 would improve visiting opportunities and closeness to home for those women with extended stays in Community Treatment Centers; these women would also be in less secure facilities. There would, of course, be no change for the women remaining at Alderson. This option is not a realistic one because the Community Treatment Center (CTC) placements at Alderson already meet or exceed existing Bureau policy on CTC use.

*Option 5: Convert the Addiction Research Center adjacent to FCI, Lexington to a secure, single-sex facility, acquire a surplus camp facility, and change the mission of FCI, Alderson to a co-correctional facility.*

Option 5 is similar to Option 1 except for the acquisition of surplus property for a camp. The unavailability of a surplus camp facility in the Northeast makes this option infeasible at this time.

*Option 6: Make no major changes in FCI, Alderson but increase the number of women placed in State institutions, including the District of Columbia.*

Option 6 would improve visiting and place women closer to home, but programming and services would be reduced in both quantity and quality. In most cases women would be confined in facilities that are even more secure than Alderson. In addition, overcrowding generally exists in those States which do have institutions for women. This option is infeasible because of the small number of appropriate State facilities.

## Recommendation

The Task Force recommends implementation of Option 1; it offers the best possible solution to the issues and problems identified at FCI, Alderson.

## INTRODUCTION

The Department of Justice Appropriation Authorization Act, Fiscal Year 1981 (Public Law\*) required the Bureau of Prisons to conduct a feasibility study of possible alternative uses for the Federal Correctional Institution (FCI), Alderson, West Virginia.

To fulfill the mandate of Congress, the Director of the Bureau of Prisons (BoP), Norman A. Carlson, appointed a Task Force to conduct the feasibility study. Members appointed to the Task Force include: Kenneth Neagle, Warden, FCI, Alderson—Chairperson; Ronald Waldron, Chief, Office of Program Development, BoP Central Office, Washington, D.C.; Patrick Kane, Executive Assistant, Northeast Regional Office, Philadelphia, Pa.; Linda Lancaster, Correctional Programs Administrator, BoP Central Office, Washington, D.C.; and Verna Muckle, Budget Analyst, Department of Justice, Washington, D.C.

\* Act not yet enacted when study was submitted.

The Task Force first convened in the Bureau of Prisons Central Office in Washington, D.C., on July 11, 1980, to meet with Director Carlson and the Assistant Directors to discuss the issues raised by the Department of Justice Appropriation Authorization Act, Fiscal Year 1981, and clarify the direction and the purpose of the Task Force.

To conduct their study, two additional meetings were held by the Task Force, on August 7, 1980, at FCI, Alderson and on September 4, 1980, in the Central Office. The Task Force reviewed available documents and conducted special studies on topics related to the specific issues before them. A draft report was prepared and submitted to the October and December 1980 Executive Staff meetings for review and comment. Subsequently, a final report was prepared on the Task Force's findings and recommendations:

## **BACKGROUND**

During the last decade, the United States has experienced increasing concern over the rights and welfare of women in prison. The Congressional Subcommittee on Courts, Civil Liberties, and the Administration of Justice has focused particular attention on the needs and confinement of women at the Alderson, West Virginia facility, in use since 1927. The Committee heard testimony from prison officials on the facility's geographic location, rehabilitative program, health services, and marketable job training assistance. Major concern was voiced about Alderson's remote location which prevented the maintenance of close family ties, especially for the residents of Washington, D.C., who comprise 25 percent of the prison population. Moreover, prison officials were concerned that perhaps many women were placed in overrestricted environments. Forty percent of all offenders at Alderson are classified as Security 1 (or minimum custody) inmates, yet they are housed in an institution that does not meet their needs.

## **OBJECTIVES OF THIS STUDY**

Following the Congressional hearings, the Alderson Task Force was appointed in June 1980 to prepare the following report exploring the feasibility of alternate uses for the Federal Correctional Institution (FCI) at Alderson as required by the Department of Justice Appropriation Authorization Act, Fiscal Year 1981. Specific alternatives the Task Force was asked to consider include (1) closing the Alderson facility as a correctional institution and using it instead for another Federal, State, local, or private purpose; (2) exploring alternative placements for women, particularly those sentenced out of the District of Columbia; and (3) seeking placement for all women appropriately designated in community based facilities and if feasible in minimum security camps or other minimum security facilities.

## **DISCUSSION OF SPECIAL ISSUES**

The Task Force reviewed the October 1979 hearings on the Female Offenders conducted by the Subcommittee on Courts, Civil Liberties, and the Administration of Justice of the Committee on the Judiciary, House of Representatives. The mandate of Congress in the Appropriation Authorization Act, Fiscal Year 1981, was also examined. Review of these and other documents suggested several issues for consideration by the Task Force.

### **Visiting**

It is a generally recognized principle of corrections that the maintenance of family and community ties by the inmate is ultimately helpful to the inmate's morale during incarceration and to the inmate's adjustment when released. The facts that Alderson is located in a rural setting in West Virginia and that many of the inmates incarcerated there are from metropolitan areas in the Northeast make it difficult for inmates who desire to do so to maintain family and community ties. No doubt if a Federal correctional facility were located within the Northeast corridor and closer to the metropolitan areas, the amount of visiting for inmates would increase.

### **Proximity to Home**

A review of the legal residence of women confined at Alderson revealed that the inmates are from 41 different states. Obviously, no single institution could be established that would place all inmates close to their legal residence. Several small institutions would place inmates closer to home, but the cost of this approach would be prohibitive.

### **Least Restrictive Environment**

Approximately 40 percent of the inmates at Alderson are now designated as level 1 inmates, requiring the least amount of security, and approximately 72 percent have community and out custody status. For those women classified as security level 1 and assigned to Alderson the environment is more restrictive than necessary. This information suggests the need for assignment to less secure facilities or community placement for a significant number of Alderson inmates.

### **Inmate Programs**

The Task Force found a wide range of program offerings were available at FCI, Alderson. Among the programs available were office skills, cosmetology, mechanical services, automated data processing, and instructional courses from the elementary school level through college. The quantity and quality of programs at Alderson appears to the Task Force to be more than adequate.

### **Medical Services**

A review of the medical services at Alderson revealed that more than adequate services were available. By way of comparison, Alderson has a ratio of 3 medical

staff members for every 100 inmates while the Bureau overall has a ratio of 2 medical staff for every 100 inmates.

Because a wide range of medical services are provided, the Task Force concluded that the medical needs of the inmates are being met.

### **District of Columbia Inmates**

The relationship between the Bureau of Prisons and the District of Columbia (D.C.) Superior Court and the D.C. Department of Corrections is unique. The District of Columbia, unlike most of the states, does not maintain a facility for long-term female offenders. Only female D.C. Code violators serving terms of one year or less are confined at the D.C. Detention Center.

A Memorandum of Understanding between the agencies states that the Bureau of Prisons will house all female D.C. Superior Court cases who are committed to terms of more than one year. Generally, these women are designated to FCI, Alderson, and constitute the largest group of female inmates with a single release destination, approximately 25 percent.

The District of Columbia has generally preferred that the Bureau of Prisons continue to assume the responsibility to confine female D.C. Code violators.

Operationally and financially, it is to the advantage of the District of Columbia to continue the present arrangement. The District spends approximately \$1.9 million each year to contract for the incarceration of their female prisoners in the Federal system as opposed to the \$3.7 million it would cost annually to operate their own 200-bed facility. Construction costs for such a facility are estimated to be over \$21 million.

The Federal Prison System recognizes the advantages for female offenders should the District of Columbia build its own correctional facility for women. Although the Bureau of Prisons would support the District in an attempt to build such a facility, it is unlikely that this will occur anytime in the foreseeable future. The Bureau of Prisons, therefore, must continue to plan and provide for the care and custody of female D.C. Code violators.

### **Other Federal, State or Local Use of FCI, Alderson**

The Department of Justice Appropriation Authorization Act, Fiscal Year 1981, recommended that the Bureau explore other Federal, State or local uses for FCI, Alderson. If FCI, Alderson were closed, the Bureau would not have sufficient capacity for those female offenders in security levels 2 through 6, requiring incarceration in a secure facility. An existing male institution would have to be converted for female use or a new facility would have to be constructed or acquired. If an existing male prison were converted to female use, Alderson would need to be converted to male use to make up the loss capacity for males. If a new facility were constructed or acquired for females, Alderson should be



converted to a Security Level 1 facility for males, as there is presently a shortage of Level 1 capacity for males in the Northeast. Therefore, if Alderson were closed for females, there exists sufficient need for the facility for other Bureau of Prisons needs and, therefore, the facility should not be made available for other Federal, State or local use.

## ALTERNATIVE USES FOR ALDERSON

Review of the issues surrounding FCI, Alderson suggested several options for consideration by the Task Force. To assess the impact of the options proposed by the Task Force, each of the following factors were evaluated:

- *Accessibility for Visitors:* Is the facility more accessible to inmate visitors?
- *Proximity to Release Destination:* Are inmates closer to their release destination?
- *Level of Programs and Services:* Would program offerings increase over the present level?
- *Appropriate Security:* Are offenders placed in facilities of the appropriate security level?
- *Capital Costs:* One time construction and equipment costs.
- *Operating Costs:* Annual salary and expenses necessary for operations.
- *Per Capital Costs:* The operating costs per inmate per day.
- *Physical Capacity:* The number of beds by which the option will increase or decrease the current base.
- *Personnel:* The total number of personnel required to implement the option.
- *Feasibility:* That which prohibits or allows the implementation of the option.

### Option 1

*Convert the Addiction Research Center adjacent to FCI, Lexington to a secure, single-sex facility; change the proposed mission of Danbury Satellite Camp to a camp for women; and change the mission of FCI, Alderson to a co-correctional facility.*

This option consists of a three-part proposal:

- Establish a camp for Level 1 inmates within the Northeast Region,
- Convert FCI, Alderson to a co-correctional facility, and,
- Establish a secure, single-sex unit for female offenders who are not appropriate candidates for co-correction.

*Camp for Level 1 Female Offenders.* The establishment of a 100 bed camp for women in the Northeast Region would allow approximately 100 Level 1 female offenders to be located closer to their intended release destinations. It would also place more offenders in an appropriate security level institution.

Among Bureau of Prisons facilities, possible sites for such a camp in the

Northeast Region include the existing Federal Prison Camp (FPC) at Allenwood, Pennsylvania; the Satellite Camp (SC) at Petersburg, Virginia; SC Lewisburg, Pennsylvania; and the planned SC Danbury, Connecticut. For reasons of location, size, and security levels, the Allenwood, Lewisburg, and Petersburg camps were eliminated from further consideration. The Danbury camp, on the other hand, did appear to offer a workable solution. The camp, adjacent to FCI, Danbury, is scheduled for completion in December 1981 with a planned capacity of approximately 100 beds. The Danbury camp will be easily accessible to residents of the New York City area. Although Washington residents would still have to travel some distance to visit women at SC, Danbury, public transportation is much more available.

Because the facility is currently under construction, it would not require transferring an existing population. This would also eliminate the disruptive influence that changing the mission of an existing facility would have on the staff. Program resources could be developed to meet the special needs of women and the FCI, Danbury population (Level 2 males) lends itself to the concept of joint programming between the two facilities.

*Conversion of FCI, Alderson to a Co-Correctional Facility.* The second component of this option entails converting Alderson from an all female institution to a Security Level 1 co-correctional facility.

SC, Danbury was originally intended to house 100 Level 1 males and the justification for its construction was based on the need in the Northeast Region for Level 1 beds. If the SC, Danbury mission is converted from a male facility to an all female facility, beds would still be needed for Level 1 males previously intended for Danbury. A change in mission of FCI, Alderson to a co-correctional facility would enable Level 1 males to be housed at Alderson.

The physical layout of the FCI, Alderson lends itself to such a concept. The change to a Level 1 co-correctional facility would require minimal, if any, modifications to the existing facility. The grounds at Alderson are already divided into "Upper Campus" and "Lower Campus," and the addition of some high mass lighting coupled with internal adjustments to correctional practices would make co-corrections at Alderson a practical alternative.

*Secure, Single-Sex Unit.* The third component of Option 1 recognizes that there are female offenders who require a secure single-sex facility.

Adjacent to FCI, Lexington, Kentucky, is the Addiction Research Center (ARC), operated by the National Institute of Mental Health. The ARC initially had a capacity for 200 beds, fifty of which recently have been converted to a psychiatric unit for Federal female offenders. The one hundred fifty beds remaining in the ARC could be converted to a single-sex secure facility. Because of its proximity to FCI, Lexington, and the existing female population presently at Lexington, programming needs for women could be met with minimal effort. Such a facility would provide appropriate security needs for those women offenders requiring a secure correctional facility.

The total proposal, then, encompasses changing the planned mission of

the Danbury camp and converting it to an all female camp (100 beds), changing Alderson's mission to a co-correctional facility (250 male), and using the 150 bed facility presently occupied by the National Institute for Mental Health at the Addiction Research Center in Lexington, Kentucky, for a secure single-sex unit for women.

Possible deterrents to this proposal include the transition of the ARC facility from NIMH to the Bureau of Prisons. The ARC will be available by January 1982, barring any major construction delays on the new NIMH facility in Baltimore. Secondly, the Federal Prison System would have to provide the necessary staff and other resources in order to activate the ARC as a Bureau of Prisons facility. This change would entail some relocation of staff and some hiring at Lexington.

Because of the nature of the population at this proposed secure unit, the inmates themselves could not mix regularly with the FCI, Lexington population. As a result, such services as Education, UNICOR and Food Service generally would have to be provided within the new unit itself. Custodial supervision would need to be increased to meet the security requirements of these offenders. Because comparable programs already exist at FCI, Lexington, staff and program resources could be drawn from the main institution, but not without some additional cost.

#### *Analysis of Option 1:*

- *Accessibility for Visitors:* Improved.
- *Proximity to Release Destination:* Overall, an improvement over existing conditions.
- *Level of Programs and Services:* No significant change.
- *Appropriate Security:* The majority of the women will be placed in more appropriate security level facilities.
- *Capital Costs:* \$0.2 million. It is assumed that the conversions at Alderson and Danbury would entail no capital costs.
- *Operating Costs:* \$7.5 million.
- *Per Capita Costs:* \$27.49 per inmate per day.
- *Physical Capacity:* No net increase in female beds and an increase of 150 male Level 1 beds.
- *Personnel:* 274 positions.
- *Feasibility:* This option is a workable one.

## **Option 2**

*Continued operation of FCI, Alderson at its current status with a long-range plan for the addition of a female camp.*

In the evaluation of the future use of FCI, Alderson, one option that must be considered is the continued use of FCI, Alderson as a Federal correctional facility for women. Admittedly, this action by itself would not address many of the issues raised concerning Alderson, but if it were coupled with the establish-

ment of a female Federal Prison Camp in the Northeast corridor, it would provide a facility for women of the lower level security somewhat closer to the legal residence of many of the offenders at Alderson.

Three approaches could be used to acquire a camp for women: (1) construct a new camp; (2) acquire military surplus property and renovate it into a camp; or (3) use an existing or planned satellite camp (such as the planned camp at Danbury) for women. Construction of a new camp would be prohibitive (\$3.8 million for 100 beds). Moreover, the Bureau has not been able to acquire a suitable surplus property site in the Northeast for a camp. The use of the planned Danbury camp appears to be the most viable option, though it would remove the badly needed male security Level 1 beds from use by the Northeast.

#### *Analysis of Option 2:*

- *Accessibility for Visitors:* No improvement for inmates at Alderson, with some improvement for inmates assigned to the camp.
- *Proximity to Release Destination:* Those who could be housed in the camp, for the most part, would be closer to home.
- *Level of Programs and Services:* The activation of a camp would improve programming in some cases and decrease it in others, for a net overall effect of no improvement.
- *Appropriate Security:* Overall, more women would be in the appropriate security level, once the camp is activated.
- *Capital Costs:* No capital costs.
- *Operating Costs:* \$6.7 million.
- *Per Capita Costs:* \$31.01 per inmate per day.
- *Physical Capacity:* An increase of 100 female beds and a decrease of 100 male beds.
- *Personnel:* 247 positions.
- *Feasibility:* Feasible but not practical considering its effects on physical capacity.

### **Option 3**

*Close FCI, Alderson and construct a 500-bed replacement facility.*

To construct a new 500-bed facility to replace FCI, Alderson would cost in the neighborhood of \$23 million. The facility should be multi-level (i.e., part secure and part camp) and ideally should be located in the Northeast corridor. The current climate of fiscal restraint and the difficulty of locating a prison site close to urban areas where it is accepted by the community make this option highly unlikely. Nonetheless, analysis of this option reveals the following points.

#### *Analysis of Option 3:*

- *Accessibility for Visitors:* Assuming that the location of such a facility would be more centrally located for inmate visitors of the Northeast Region, opportunities for visiting could improve.

- *Proximity to Release Destination:* A new facility in the Northeast Corridor would place a large number of inmates closer to their release destination.
- *Level of Programs and Services:* All levels of programming could be at least as good as, if not better than, the programs currently offered at FCI, Alderson.
- *Appropriate Security:* A secure replacement facility with a satellite camp would improve the assignment of inmates to the appropriate security level.
- *Capital Costs:* \$23 million. If capital costs were amortized over 30 years at 13 percent it would represent an additional 0.9 million in yearly operating costs.
- *Operating Costs:* \$5.9 million, or \$6.8 million with capital costs amortized.
- *Per Capita Costs:* \$32.43 per inmate per day.
- *Physical Capacity:* No change.
- *Personnel:* 217 positions.
- *Feasibility:* Not feasible given the current fiscal climate and difficulty of locating prison sites in urban areas.

#### **Option 4**

##### *Increase the use of Community Treatment Centers.*

One way to place offenders closer to home in less restrictive environments would be to increase the use of Community Treatment Centers (CTCs). However, the Bureau's current goal is to have offenders remain an average of 120 days. Presently, those women who have participated in CTC placement stay an average of 138 days, far in excess of the current goal. In addition, 58 percent of the releasees at Alderson participate in CTC programs compared to 47 percent Bureau-wide. It was the opinion of the Task Force, in view of existing goals and the above facts, that further expansion of CTC placement for women offenders is not feasible.

##### *Analysis of Option 4:*

- *Accessibility for Visitors:* Would increase visiting opportunities.
- *Proximity to Release Destination:* Would place women closer to their release destination.
- *Level of Programs and Services:* Overall decrease in availability of programs and increase in the availability of community services.
- *Appropriate Security:* Improved assignment by security level.
- *Capital Costs:* No capital costs.
- *Operating Costs:* \$7.0 million.
- *Per Capita Costs:* \$32.35 per inmate per day.
- *Physical Capacity:* Would result in a surplus of beds for women at current population levels.
- *Personnel:* 230 positions.
- *Feasibility:* Not feasible.

## Option 5

*Activation of ARC, Lexington. Acquisition of surplus camp and the conversion of FCI, Alderson to a co-correctional facility.*

The issues presented in Option 1 are applicable here, except for the acquisition of surplus property for a Federal Prison Camp. Under this proposal, the Bureau of Prisons would attempt to locate an appropriate camp in the Northeast among properties regarded as surplus by other agencies.

The Bureau has maintained a continuing check of government surplus property over the last several years and has recently been successful in establishing Federal Prison Camps in Boron, California and Big Spring, Texas. Such an approach has saved the taxpayers millions of dollars in construction costs and has provided the Bureau with badly needed bedspace. Unfortunately, the Bureau has been unable to locate suitable surplus property in the Northeast. Of the four sites reviewed recently by the Bureau, two were as isolated as Alderson, one was objected to by the Navy, and the Bureau was advised by a congressional representative that the other would not have community support and in fact would be strongly opposed. At this time, therefore, the possibility of acquiring surplus property for a female camp in the Northeast does not appear likely.

The analysis of this option would be essentially the same as Option 1, except as it pertains to the acquisition of surplus property for a Federal Prison Camp.

### *Analysis of Option 5:*

- *Accessibility of Visitors:* Improved visiting opportunities.
- *Proximity to Release Destination:* Women would be housed closer to their release destination.
- *Level of Programs and Services:* Same as Option 1.
- *Appropriate Security:* Same as Option 1.
- *Capital Costs:* \$1.0 million.
- *Operating Costs:* \$9.5 million.
- *Per Capita Costs:* \$29.05 per inmate per day.
- *Physical Capacity:* Increase of 350 Level 1 beds for males.
- *Personnel:* 356 positions.
- *Feasibility:* Not feasible because of the unavailability of surplus camps.

## Option 6

*Make no major changes at FCI, Alderson but increase the use of State placements for women.*

At present, 85 women convicted of Federal crimes, approximately 6% of the female prison population, are housed in State facilities. The development of contracts with the individual States would, in most cases, allow women to be incarcerated in facilities that are closer to their intended release destination. This plan would eliminate the need for any Federal prisons for women and

place the issue of incarcerated women in the hands of the States. Although this would place women closer to their intended release destination, the option is not feasible because requests by the Northeast office of the Federal Prison System to transfer Federal female prisoners to State custody are more frequently denied than accepted.

<i>State Request Was Made to</i>	<i>Number of Requests</i>	<i>Accepted or Denied</i>
Nevada	4	Three were accepted, and one was denied because the female was in need of psychiatric care which the State facility was unable to provide.
Oregon	1	Denied for lack of an adequate State psychiatric program.
Connecticut	1	Denied because the inmate had adjustment problems in the Federal system.
Washington	1	Denied because the inmate had adjustment problems in the Federal system.

All of the States in the Northeast Region, except New Hampshire, have a facility to house female offenders; however, each State has only *one* facility and generally these are overcrowded. In addition, the facilities in Maine, Massachusetts, New Jersey, and Vermont house both male and female offenders and therefore are not suitable for inmates who are unable to be placed in a co-correctional program. Furthermore, the facility in the District of Columbia is only a detention center which houses short-term male and female detainees. As in the Northeast, other States do not have space for Federal female offenders; consequently, this option is not feasible.

#### *Analysis of Option 6:*

- *Accessibility of Visitors:* Would increase visiting opportunities.
- *Proximity to Release Destination:* Would place offenders closer to their release destination.
- *Level of Programs and Services:* Given the generally overcrowded conditions in State women's institutions and their reduced level of funding and other resources, it is unlikely that Federal female offenders would experience any improvements in program offerings.
- *Appropriate Security:* The types and security levels of contract facilities would vary from State to State, but in many cases only one secure, single-sex facility is available for women. There would be no improvement over the security provided at FCI, Alderson and it is highly likely that many State facilities would actually be more secure than FCI, Alderson.
- *Capital Costs:* No capital costs.
- *Operating Costs:* \$7.0 million.
- *Per Capita Costs:* \$32.35 per inmate per day.

- *Physical Capacity:* Would result in an excess of beds for women at current population levels.
- *Personnel:* 230 positions.
- *Feasibility:* Not feasible.

## SUMMARY AND RECOMMENDATIONS

Table 1 includes a summary analysis of the options reviewed in this report. The Task Force rank ordered the options according to their viability, and concluded Option 1 was the most viable. It offered the best possible solution to the issues and problems at FCI, Alderson identified in this report.

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Source: Kolin, P. C. and J. L. Kolin. 1985. Models for technical writing. New York: St. Martin's Press, 322-336.



**Table 1. SUMMARY OF OPTIONS**

Options	Accessi- bility for Visitors	Proximity to Release Destination	Level of Programs & Services	Appro- priate Security	Capital Costs	Operating costs†	Per Capita Costs	Inc./Dec.* Physical Capacity		Per- sonnel**	Feasi- bility
								M	F		
1 ARC/BOP Camp/Co- Corr. Alderson	improved	closer for more	better for most, worse for some	yes	\$0.2M	\$7.5M (0.8M)	\$27.99	+150	0	274 (30)	yes
2 Continue present status Alderson with Camp Dan.	same	same	same	no	\$0	\$6.7M (0.1M)	\$31.01	-100	+100	247 (3)	yes
3 Close Alderson build 500 bed facility	improved for most in- mates	closer for most in- mates	same or better	yes	\$26M	\$5.9M (-0.3M)	\$32.43	0	0	217 (-13)	no
4 No change at Alderson but expand CTC utiliza- tion	improved	closer for a few	worse, minimal programs other than work	yes	\$0	\$7.0M (0.8M)	\$32.35	0	0	230 (0)	no
5 ARC/Surplus Camp/Co- Corr. Alderson	improved	closer for more	better for most, worse for some	yes	\$1.0M	\$9.5M (3.1M)	\$29.05	+350	+50	356 (112)	no
6 No change at Alderson but increase state place- ments	improved	closer for a few	worse	probably not	\$0	\$7.0M (0.8M)	\$32.35	0	0	230 (0)	no

\* Represents an increase or decrease over existing physical capacity, which includes SC, Danbury.

\*\* Figures in brackets ( ) represent increase or decrease over current base.

† Figures in brackets ( ) represent increase or decrease over current base.

## APPENDIX D

### A FEASIBILITY REPORT ORIENTED TO CONTROLLERS

930 Cleveland Avenue, South  
St. Paul, MN 55116  
March 10, 1983

Dr. Milton W. Weller  
Professor and Head  
Department of Entomology, Fisheries, and Wildlife  
University of Minnesota  
St. Paul, MN 55108

Dear Dr. Weller:

Enclosed is my Feasibility Report on a Portable Cassette  
Tape Recorder for Field Research. It is submitted for your  
consideration and approval.

The report recommends that the department purchase either a  
Nakamichi 550 portable cassette tape recorder or, as a  
close second choice, the AIWA TPR-945. All recorders  
considered in the report meet the minimum standards set by  
the department. Final conclusions and recommendations are  
based on a comparison using frequency response, cost, size  
and weight, and battery requirements.

I hope this report will help you decide on a portable  
cassette tape recorder for your research projects. If you  
have any questions or problems concerning the report,  
please write or call (690-5849).

Sincerely yours,

David M. Zellar

Enclosure

FEASIBILITY REPORT ON A PORTABLE CASSETTE

TAPE RECORDER FOR FIELD RESEARCH

Prepared for

Dr. Milton W. Weller

Professor and Head

Department of Entomology, Fisheries, and Wildlife

University of Minnesota

by

David M. Zellar

Abstract

This report presents the results of a study that considered the purchase by the Department of Entomology, Fisheries, and Wildlife of a portable cassette recorder for field research. The report discusses the minimum specifications this tape recorder must meet and compares tape recorders meeting these minimum specifications on the basis of frequency response, cost, size and weight, and battery requirements. Conclusions and recommendations are reached.

March 10, 1983

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FEASIBILITY REPORT ON A PORTABLE CASSETTE  
TAPE RECORDER FOR FIELD RESEARCH

INTRODUCTION

This report presents the results of a study that considered the purchase by the Department of Entomology, Fisheries, and Wildlife (EFW) of a portable cassette tape recorder for the Department's field research projects.

The study was designed to determine, first, if a portable cassette tape recorder was available that could meet EFW's minimum specifications for field research applications, as follows: (1) weigh 20 pounds or less; (2) be powered by disposable, reasonably priced, readily available batteries; (3) have a frequency response of 100-12,000 Hz or better; (4) cost \$750 or less; and (5) be purchased and serviced locally. I found four such recorders: the Marantz Superscope CD-330, the RMF 740 AV Stereo Recorder, the AIWA TPR-945, and the Nakamichi 550. Second, I compared these four on the basis of frequency response, cost, size and weight, and battery requirements. (All technical information concerning the tape recorders compared comes from the respective company publications

listed in the References.) Included in each of these comparisons are a definition and a rating of good or acceptable for each of the tape recorders according to the definition. Because EFW considers frequency response and cost the most important criteria, my recommendations have come mostly from the comparisons based on them.

#### FACTUAL SUMMARY

Because the tape recorder is being purchased primarily to record bird vocalizations, the frequency response should match such vocalizations as closely as possible. Because bird vocalizations may range from 100-18,000 Hz, ideally, the recorder response should match that range. Cost is important because only a limited amount of money is available.

Following is a table that summarizes ratings and key data for the four tape recorders that meet the minimum specifications. Because battery life was not provided in the information available for the recorders considered, satisfaction of the battery requirements criterion is not rated.

	<u>Frequency Response</u>	<u>Cost</u>	<u>Size and Weight</u>
Marantz Superscope CD-330	acceptable (40-13,000 Hz)	good (\$249)	good (7.8 lb)
RMF 740 AV Stereo Recorder	acceptable (40-12,500 Hz)	acceptable (\$579)	good (8.0 lb)
AIWA TPR-945	good (50-15,000 Hz)	good (\$350)	acceptable (12.5 lb)
Nakamichi 550	good (40-17,000 Hz)	acceptable (\$640)	good (8.3 lb)

As the data show, the Marantz, RMF, and Nakamichi machines are approximately the same weight. The Aiwa is more than four pounds heavier than the others and is also larger in all its dimensions.

#### CONCLUSIONS

1. Four portable cassette tape recorders are available that meet minimum specifications.
2. On the basis of the most important criterion, frequency response, the Nakamichi is the best choice.
3. On the basis of cost, the Marantz is the best choice.
4. On the basis of cost and frequency response, the AIWA may be a good compromise choice.



5. On the basis of size and weight, all the recorders are at least acceptable, but on this criterion, the AIWA is the least desirable.
6. The results of the battery requirements comparison are too ambiguous to use as a basis of comparison for this study.
7. None of the recorders is clearly superior, but because frequency response is considered most important in this study, the Nakamichi 550 may be the best buy. However, if cost and frequency response are considered equally important, and size and weight are not considered, the AIWA TPR-945 would be the best buy.

#### RECOMMENDATIONS

On the basis of this study I recommend the following to

EFW:

1. If sufficient money is available, buy the Nakamichi 550 portable cassette tape recorder.
2. If the Nakamichi is considered too expensive, buy the AIWA TPR-945.

#### A. FREQUENCY RESPONSE

EFW will purchase the tape recorder primarily to record bird vocalizations. The department may later use these recordings to construct sonagrams for further studies. The frequency response of the tape recorder used is the single most important factor in making sonagrams from tape recordings.

##### Definition

The cassette recorder purchased should, ideally, have a frequency response that would be able to record all bird vocalizations. Robbins et al. (1966) include sonagrams for a variety of birds in their book Birds of North America. These sonagrams indicate that bird vocalizations may range from 100-18,000 Hz. Ideally, therefore, the recorder purchased should have a frequency response to match that range. However, very few portable cassette tape recorders are capable of such a frequency response, and the few that are cost too much to be considered. Further study of the sonagrams, however, reveals that the majority of bird vocalizations fall within the 100-12,000 Hz range with only a rare few exceeding 15,000 Hz. Therefore, for this study a

frequency response of 100-15,000 Hz will be rated acceptable, and a frequency response that exceeds this range will be rated good. These ranges may limit the cassette tape recorder's research application for a few species, but will allow the purchase of a very acceptable machine for most studies.

#### Sensitivity of Recording Tapes

The frequency response depends somewhat on the type of recording tape used. Three basic types are currently available:

1. Standard tape
2. CrO<sub>2</sub> tape
3. FeCr tape

The construction of these tapes makes a difference in the sensitivity of the sound they will reproduce. FeCr tapes are the most sensitive of the three and also the most expensive. Also, they are not always readily available, which makes them somewhat impractical for use. The CrO<sub>2</sub> tapes are not quite as sensitive as the FeCr tapes, but they are better than the standard tapes. They are slightly more expensive than standard tapes, but they are readily

available. Because frequency response is so important, CrO<sub>2</sub> tape will be used for all frequency response data in this study. Standard tapes will reduce the response slightly, and FeCr tapes will improve it slightly.

#### Comparison

Two of the four cassette tape recorders in this study are rated good. Of the two, the Nakamichi 550 has the better frequency response: 40-17,000 Hz. This comes very close to the ideal frequency response of 100-18,000 Hz and is exceptionally good for a portable cassette tape recorder. The AIWA TPR-945 is also rated good, having a frequency response of 50-15,000 Hz. Both of these machines would be good choices if only frequency response is considered. The other two machines are not as good, but both are rated acceptable. The Marantz Superscope CD-330 has a frequency response of 40-13,000 Hz, slightly better than the 40-12,500 Hz range of the RMF 740 AV Stereo Recorder.

#### B. COST

#### Definition

The original proposal set \$500 as the maximum amount to be paid for the tape recorder. After further discussion,

however, Dr. Weller agreed to \$750 as a more realistic limit. This amount is for the purchase of the tape recorder only. Microphones and other accessories are already available for use with the machine. Quoted prices were accurate as of March 1 but may change before the machine is actually purchased. For this study a cost of less than \$500 is rated good; a cost of between \$500 and \$750 is rated acceptable.

#### Comparison

Two of the four recorders cost less than \$500 and are rated good. The Marantz Superscope CD-330, at \$249, costs the least of the machines compared. The AIWA TPR-945, at \$350, is still well below the original \$500 maximum. For machines that meet the specifications of this study, the prices of both these machines are quite low. The other two machines cost considerably more but are still in the acceptable range. The RMF 740 AV Stereo Recorder is \$579; the Nakamichi 550 is \$640.

#### C. SIZE AND WEIGHT

#### Definition

Although frequency response and cost are the two major

criteria, size and weight cannot be overlooked in a machine to be used in field research. Size and weight become especially important if the researcher must carry the machine long distances over rough terrain. Three of the four recorders are very similar in size and weight. The fourth is considerably larger and heavier. For comparison the three similarly sized recorders are rated good, and the fourth is rated acceptable.

#### Comparison

The following table summarizes the dimensions (in inches) and the weights (in pounds) of the four recorders compared:

	<u>Length</u>	<u>Width</u>	<u>Height</u>	<u>Weight</u>
Marantz Superscope CD-330	11.6	7.75	3.25	7.8
RMF 740 AV Stereo Recorder	11.3	8.6	4.25	8.0
AIWA TPR-945	19.3	14.6	5.2	12.5
Nakamichi 550	11.5	9.6	4.5	8.3

The three recorders rated good are the Marantz, the RMF, and the Nakamichi. The Marantz is the smallest and lightest of the three followed closely by the RMF and the Nakamichi. All

three machines are very small and light for quality portable cassette tape recorders and, compared by size and weight only, would be good choices. The AIWA, although larger and heavier than the other three, is rated acceptable. Its weight of 12.5 pounds is well within the minimum specification of 20 pounds set by EFW.

#### D. BATTERY REQUIREMENTS

##### Definition

The original proposal stated that the cassette recorder must be powered by batteries that are disposable, reasonably priced, and readily available. The only cassette recorders that meet this requirement are powered by disposable size C and size D dry-cell batteries. Therefore, all the machines considered are powered by similar batteries, and the only important difference is the number of batteries needed. The number may be especially important if the field study is to be of extended length and replacement batteries must be carried.

##### Comparison

The following table summarizes the number and size of batteries needed by each machine:

	<u>Number</u>	<u>Size</u>
Marantz Superscope CD-330	4	D
RMF 740 AV Stereo Recorder	5	C
AIWA TPR-945	6	C
Nakamichi 550	8	C

The Marantz, using the fewest batteries, would seem to be the best choice for an extended field trip if only battery requirements are considered. But the length of operation on a set of batteries is also a factor. According to dealers, the Nakamichi's batteries will record for 15 continuous hours. However, no definite evidence is available in the literature to prove this point one way or another. Actually, none of the literature for any of the recorders is clear about how long batteries will last in operation. Because, on an extended field trip, length of operation could be as important as number of batteries required, which machine satisfies this criterion the best remains somewhat ambiguous. Therefore, I have not rated any of the machines good or acceptable in this category.



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VITA

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